APPENDICES

A	Photographs
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C	Manifests for Hazardous Waste Transported from the West Property
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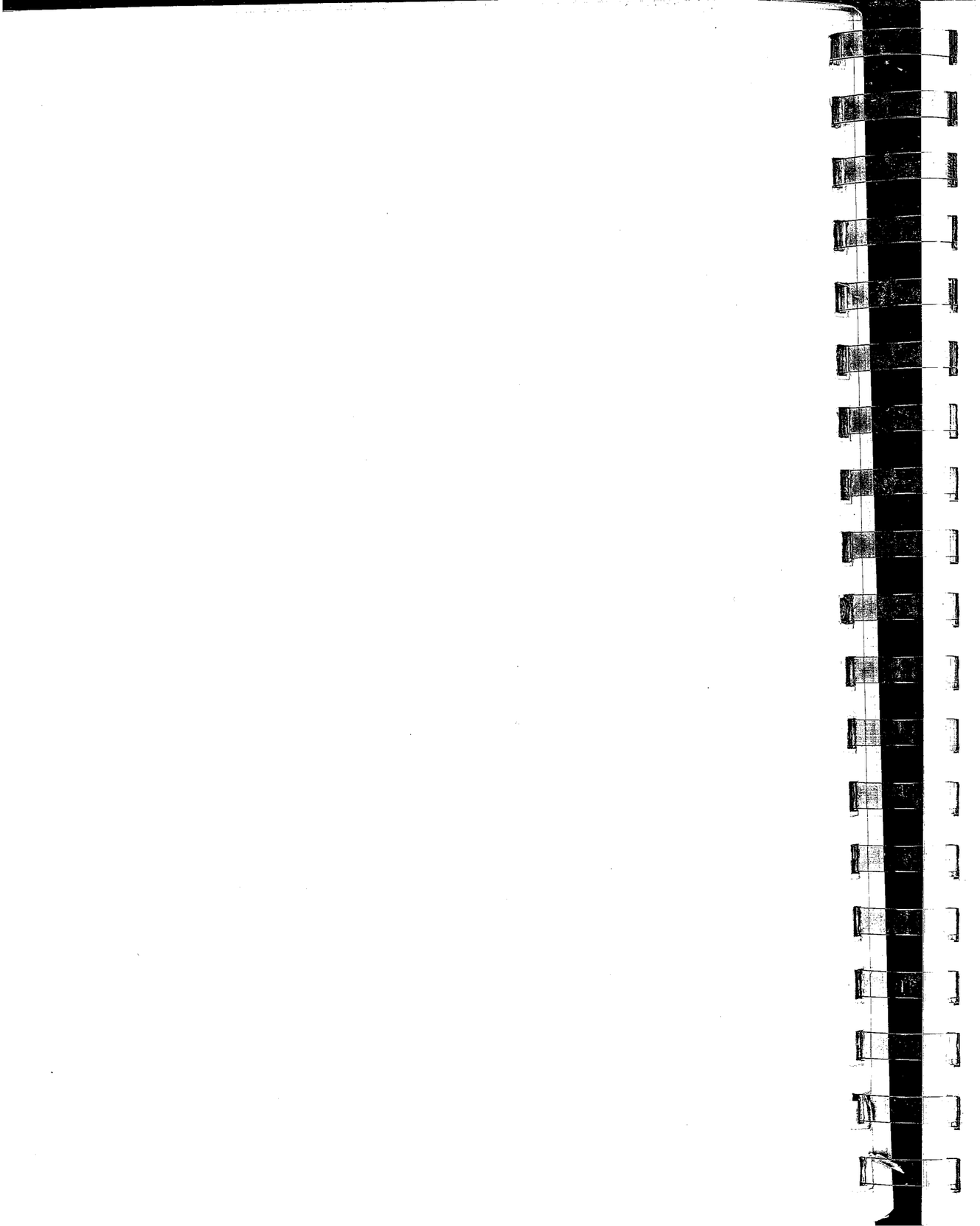
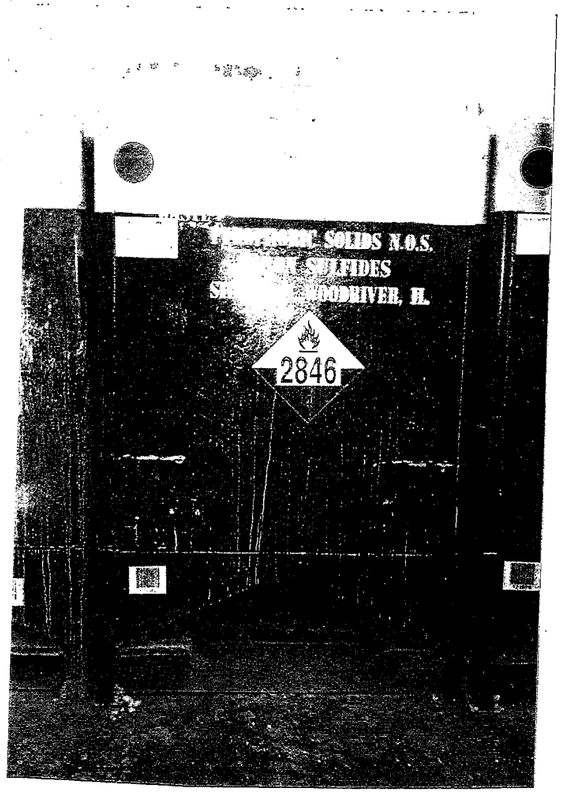
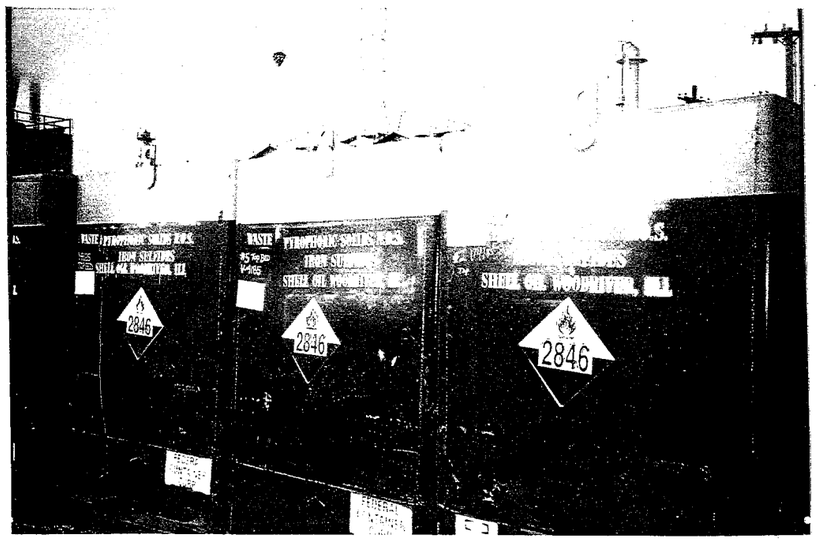


APPENDIX A

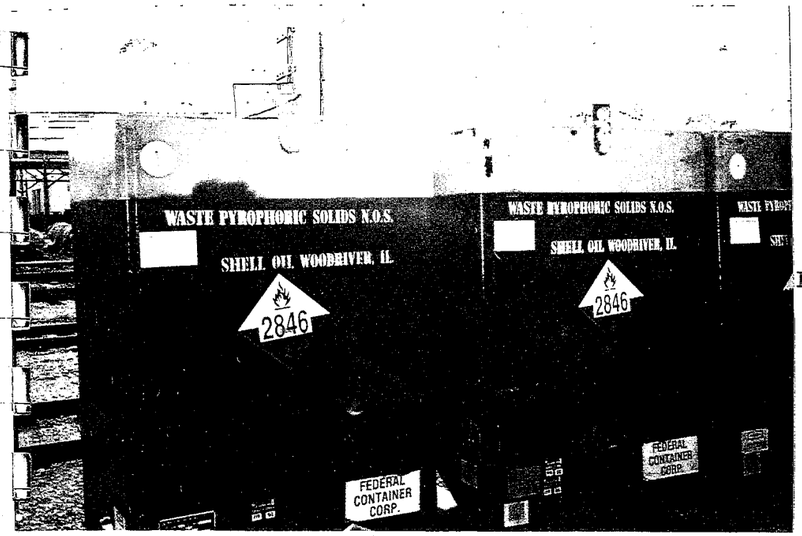
PHOTOGRAPHS



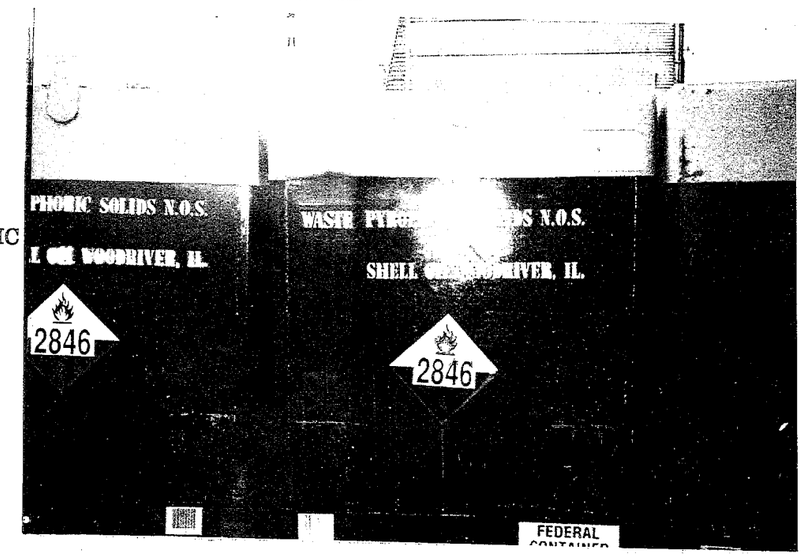
PHOTOGRAPH 1: WASTE PYROPHORIC SOLIDS BIN



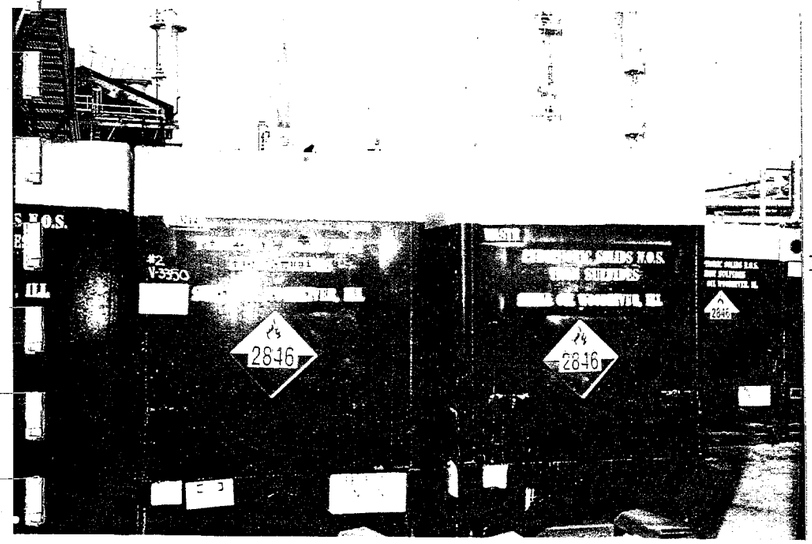
PHOTOGRAPH 2: WASTE PYROPHORIC SOLIDS BIN



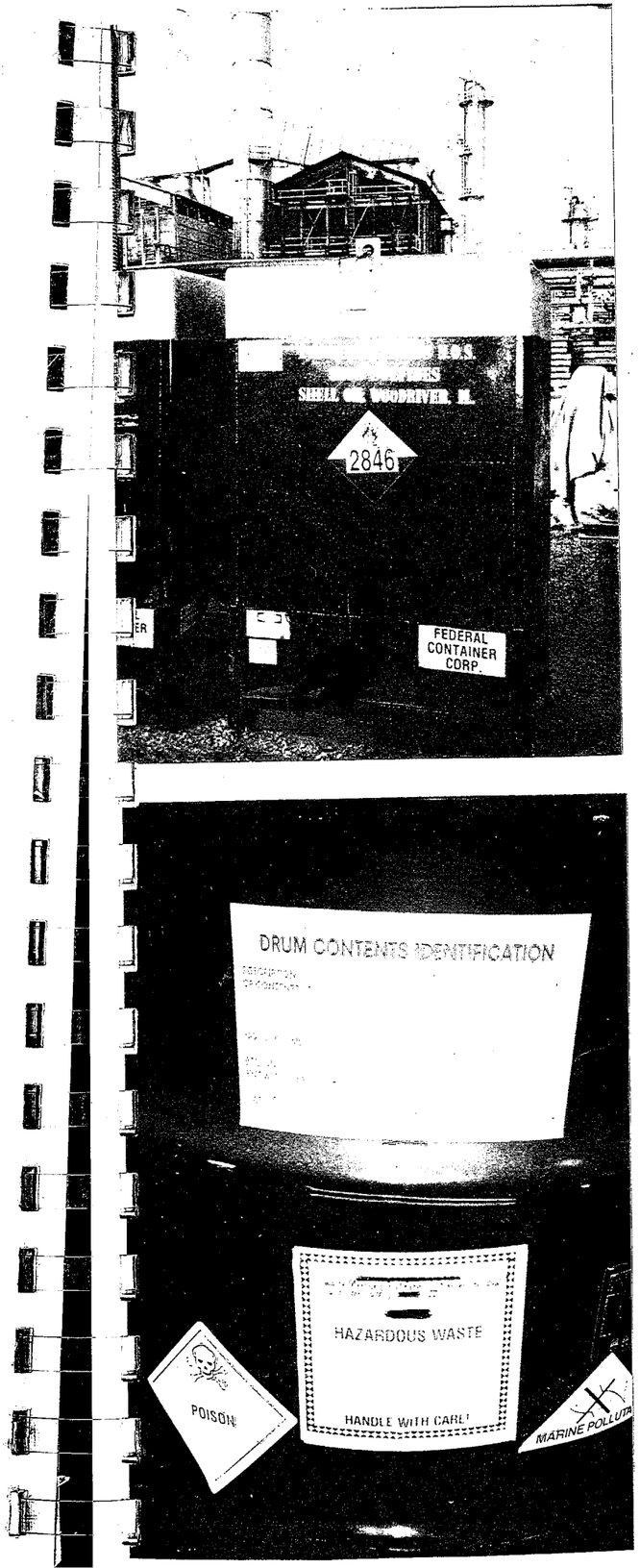
PHOTOGRAPH 3: WASTE PYROPHORIC SOLIDS BIN



PHOTOGRAPH 4: WASTE PYROPHORIC SOLIDS BIN

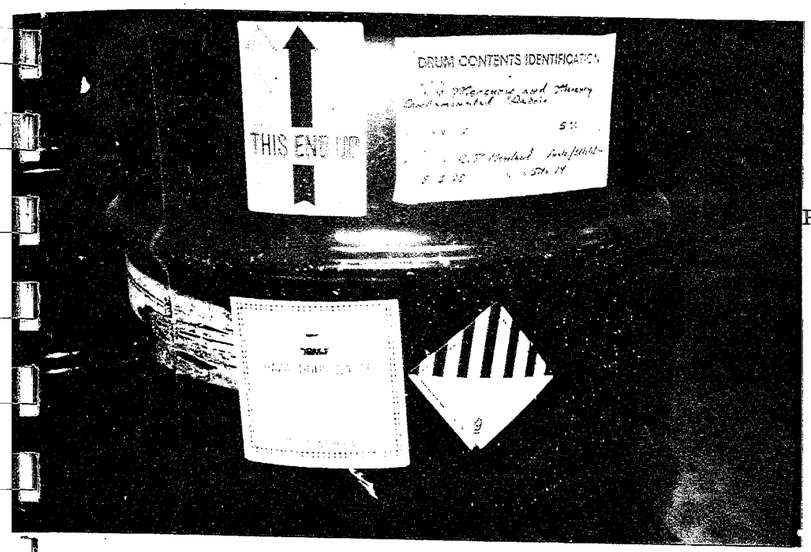


PHOTOGRAPH 5: WASTE PYROPHORIC SOLIDS BIN

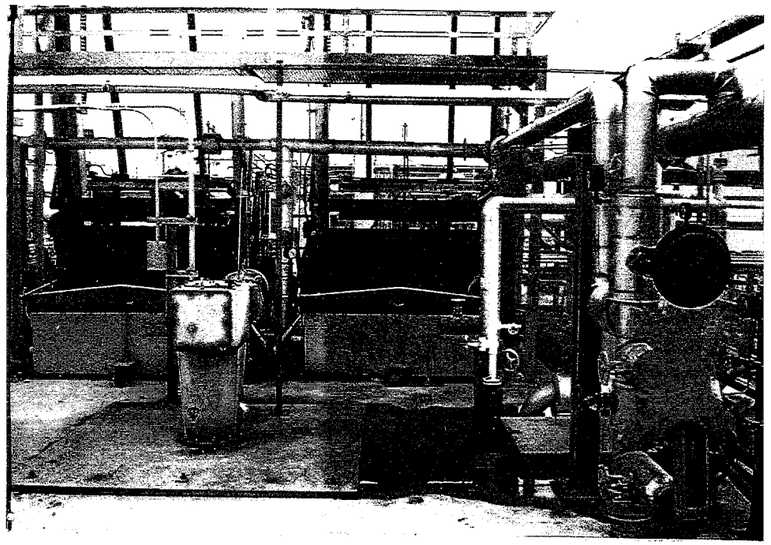


PHOTOGRAPH 6: WASTE PYROPHORIC SOLIDS BIN

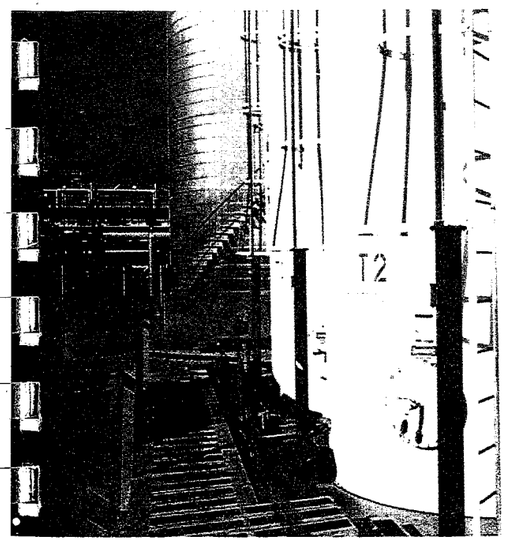
PHOTOGRAPH 7: HAZARDOUS WASTE DRUM MISSING
THE EPA HAZARDOUS WASTE NUMBER

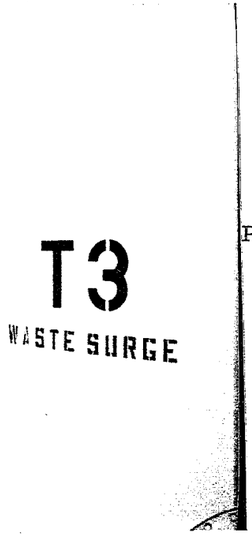


PHOTOGRAPH 8: HAZARDOUS WASTE DRUM MISSING THE EPA hAZARDOUS WAS NUMBER



PHOTOGRAPH 9: BAR SCREEN DEBRIS BINS MISSING LABELS





PHOTOGRAPH 10: HAZARDOUS WASTE TANKS FOR STORAGE PRIMARY SOLIDS

APPENDIX B

EXIT CONFERENCE ATTENDANCE LISTS

Closing Conference - 11-5-93

NAME	COMPANY	Number
KEN GARING	EPA-NEIC	(303) 236-5124
Daren Vanlerberghe	EPA-NEIC	(303) 236-5124
Clyde Wiseman	Shell	(618) 255-3375
Lynda Tekrony	EPA-NEIC	(303) 236-5124
Anne Bullington	EPA-NEIC	(303) 236-5124
Gary Spears	Shell	618-255-3375
Joe Brewster	Shell	618-255-2478
LARRY HEUCATTER	SHELL	618 255-2448
Jeff Deerhake	Shell	255-2369
Chris Cahnovsky	IEPA	346-5120
JOHN JUSTICE	IEPA	618/346-5120
Jay Ranken	Shell	618 255 2737
Colleen Hutchings	Shell	618-255-2265
ERIC PETERSEN	Shell	618-255-3190
Randy Zerkel	Shell	618-255-2734
ROBERT MILLER	SHELL	(618) 255-2605
KENT PECCOLA	Shell	(618) 255-2758
Robert Gillette	Shell	(618) 255-2755
Gina Nicholson	Shell	618-255-2512
Jeff Benkenick	State of Ill EPA	618-346-5120
SERGIO SIAO	EPA-NEIC	(303) 236-5124
E Gayle Johnson	Shell	(618) 255 2201

APPENDIX C

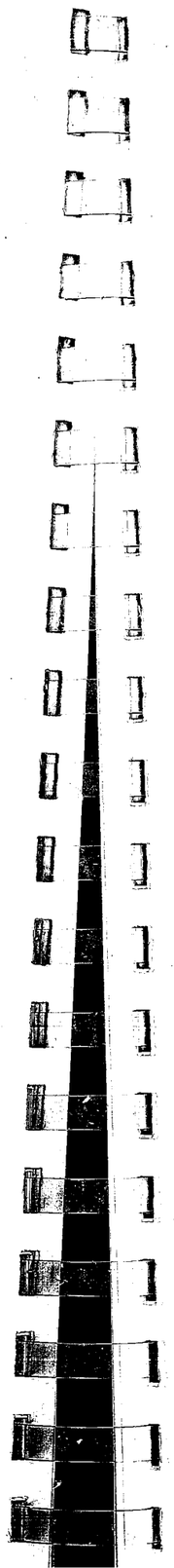
MANIFESTS FOR HAZARDOUS WASTE TRANSPORTED FROM THE WEST PROPERTY

MANIFESTS FOR HAZARDOUS WASTE TRANSPORTED FROM THE WEST PROPERTY
Shell Oil Company
Roxana, Illinois

Manifest Number	Date	Waste Numbers
014303-0156	09-23-93	D018, F037, F038, K048
IL4591940	09-19-93	F037, F038, K048
IL4591941	09-20-93	F037, F038, K048
IL4591945	09-27-93	F037. F038, K048
IL4591946	09-26-93	F037, F038
IL4591947	09-30-93	F037, F038, K048
INA0533187	06-07-92	K048, K049
INA0533188	06-09-92	K048, K049
INA0533189	06-14-92	K048, K049
INA0533190	06-23-92	K048, K049
INA0533191	06-21-92	K048, K049
INA0533192	06-28-92	K048, K049
INA0533193	06-29-92	K048, K049
INA0595830	01-15-92	K048, K049
INA0595831	01-15-92	K048, K049
INA0595833	01-19-92	K048, K049
INA0595834	01-20-92	K048, K049
INA0595835	02-18-92	K048, K049
INA0595837	02-19-92	K048, K049
INA0595838	02-20-92	K048, K049
INA0595840	03-25-92	K048, K049
INA0595841	03-26-92	K048, K049
INA0595843	03-27-92	K048, K049
INA0595845	03-30-92	K048, K049
INA0595873	01-02-92	F037, K048
INA0595874	01-02-92	F037, K048
INA0595875	01-02-92	F037, K048
INA0595877	01-11-92	F037, K048
INA0595878	01-03-92	F037, K048
INA0595879	01-03-92	F037, K048
INA0595880	01-07-92	F037, K048
INA0595882	01-07-92	F037, K048
INA0595883	01-11-92	F037, K048

MANIFESTS FOR HAZARDOUS WASTE TRANSPORTED FROM THE WEST PROPERTY (cont.)

Manifest Number	Date	Waste Numbers
INA0595884	01-11-92	F037, K048
INA0595885	01-13-92	F037, K048
INA0595886	01-13-92	F037, K048
INA0595887	01-14-92	F037, K048
INA0595888	01-16-92	F037, K048
INA0595889	01-17-92	F037, K048
INA0595890	01-19-92	F037, K048
INA0595891	01-21-92	F037, K048
INA0595892	01-22-92	F037, K048
INA0595894	01-26-92	F037, K048
INA0595895	01-27-92	F037, K048
INA0595896	01-28-92	F037, K048
INA0595897	01-28-92	F037, K048
INA0595898	01-27-92	F037, K048
INA0595899	01-31-92	F037, K048
INA0595900	01-31-92	F037, K048
INA0595901	02-03-92	F037, K048
INA0595902	02-04-92	F037, K048
INA0595903	02-05-92	F037, K048
INA0595904	02-06-92	F037, K048
INA0595905	02-07-92	F037, K048
INA0595906	02-10-92	F037, K048
INA0595907	02-10-92	F037, K048
INA0595908	02-11-92	F037, K048
INA0595909	02-11-92	F037, K048
INA0595910	02-12-92	F037, K048
INA0595911	02-14-92	F037, K048
INA0595912	02-17-92	F037, K048
INA0595913	02-18-92	F037, K048
INA0595916	01-03-92	F037, K048
INA0595917	02-18-92	F037, K048
INA0595918	02-19-92	F037, K048
INA0595920	02-20-92	F037, K048
INA0595921	02-20-92	F037, K048



MANIFESTS FOR HAZARDOUS WASTE TRANSPORTED FROM THE WEST PROPERTY (cont.)

Manifest Number	Date	Waste Numbers
INA0595922	02-24-92	F037, K048
INA0595923	02-24-92	F037, K048
INA0595924	02-25-92	F037, K048
INA0595925	02-25-92	F037, K048
INA0595927	02-28-92	F037, K048
INA0595926	02-26-92	F037, K048
INA0595928	03-02-92	F037, K048
INA0595929	03-02-92	F037, K048
INA0595930	03-04-92	F037, K048
INA0595931	03-03-92	F037, K048
INA0595932	03-04-92	F037, K048
INA0595933	03-04-92	F037, K048
INA0595934	03-05-92	F037, K048
INA0595935	03-07-92	F037, K048
INA0595937	03-09-92	F037, K048
INA0595940	03-09-92	F037, K048
INA0595941	03-10-92	F037, K048
INA0595942	03-10-92	F037, K048
INA0595943	03-12-92	F037, K048
INA0595944	03-13-92	F037, K048
INA0595945	03-13-92	F037, K048
INA0595946	03-16-92	F037, K048
INA0595947	03-16-92	F037, K048
INA0595948	03-17-92	F037, K048
INA0595949	03-17-92	F037, K048
INA0595950	03-18-92	F037, K048
INA0595952	03-19-92	F037, K048
INA0595953	03-20-92	F037, K048
INA0595954	03-20-92	F037, K048
INA0595955	03-20-92	F037, K048
INA0595956	03-23-92	F037, K048
INA0595957	03-23-92	F037, K048
INA0595958	03-23-92	F037, K048
INA0595959	03-23-92	F037, K048

MANIFESTS FOR HAZARDOUS WASTE TRANSPORTED FROM THE WEST PROPERTY (cont.)

Manifest Number	Date	Waste Numbers
INA0595960	03-23-92	F037, K048
INA0595961	03-24-92	F037, K048
INA0595962	03-25-92	F037, K048
INA0595963	03-25-92	F037, K048
INA0595964	03-26-92	F037, K048
INA0595965	03-26-92	F037, K048
INA0595966	03-27-92	F037, K048
INA0595967	03-30-93	F037, K048
INA0595968	03-31-92	F037, K048
INA0595969	03-30-92	F037, K048
INA0595970	03-31-92	F037, K048
INA0595971	03-31-92	F037, K048
INA0596054	06-05-92	K048, K049
INA0684541	07-22-92	K048, K049
INA0684542	08-03-92	K048, K049
INA0684623	12-28-92	D018, F037, F038, K048
INA0684624	12-28-92	D018, F037, F038, K048
INA0684626	01-04-93	D018, F037, F038, K048
INA0684627	01-04-93	D018, F037, F038, K048
INA0684628	01-04-93	D018, F037, F038, K048
INA0684629	12-29-92	D018, F037, F038, K048
INA0684651	08-30-92	K048, K049
INA0684652	09-09-92	K048, K049
INA0684653	09-14-92	K048, K049
INA0684654	09-12-92	K048, K049
INA0684655	09-22-92	K048, K049
INA0684657	10-05-92	K048, K049
INA0684658	10-08-92	K048, K049
INA0684659	10-13-92	K048, K049
INA0684660	10-16-92	K048, K049
INA0684661	11-19-92	K048, K049
INA0684662	11-30-92	K048, K049
INA0684670	11-17-92	K048, K049
INA0726439	01-18-93	D018, F037, F038, K048

Manifest Number	Date	Waste Numbers
INA0726440	01-18-93	D018, F037, F038, K048
INA0726442	02-03-93	D018, F037, F038, K048
INA0726443	02-04-93	D018, F037, F038, K048
INA0726444	02-09-93	D018, F037, F038, K048
INA0726445	02-09-93	D018, F037, F038, K048
INA0726446	02-15-93	D018, F037, F038, K048
INA0726447	02-15-93	D018, F037, F038, K048
INA0726448	02-22-93	D018, F037, F038, K048
INA0726449	02-24-93	D018, F037, F038, K048
INA0726450	02-24-93	D018, F037, F038, K048
INA0726451	03-02-93	D018, F037, F038, K048
INA0726452	03-02-93	D018, F037, F038, K048
INA0726453	03-04-93	D018, F037, F038, K048
INA0726454	03-11-93	D018, F037, F038, K048
INA0726455	03-11-93	D018, F037, F038, K048
INA0726456	03-16-93	D018, F037, F038, K048
INA0726494	03-19-93	D018, F037, F038, K048
INA0726495	03-19-93	D018, F037, F038, K048
INA0726496	03-22-93	D018, F037, F038, K048
INA0726502	03-26-93	D018, F037, F038, K048
INA0726503	03-31-93	D018, F037, F038, K048
INA0726504	03-31-93	D018, F037, F038, K048
INA0726505	04-05-93	D018, F037, F038, K048
INA0726506	04-05-93	D018, F037, F038, K048
INA0726507	04-08-93	D018, F037, F038, K048
INA0726508	04-15-93	D018, F037, F038, K048
INA0726509	04-19-93	D018, F037, F038, K048
INA0726510	04-21-93	D018, F037, F038, K048
INA0726511	04-23-93	D018, F037, F038, K048
INA0726513	05-03-93	D018, F037, F038, K048
INA0726514	05-10-93	D018. F037. F038, K048
INA0726515	05-14-93	D018, F037, F038, K048
INA0726516	05-17-93	D018, F037, F038, K048
INA0726517	05-20-93	D018, F037, F038, K048

MANIFESTS FOR HAZARDOUS WASTE TRANSPORTED FROM THE WEST PROPERTY (cont.)

Manifest Number	Date	Waste Numbers
INA0726518	05-26-93	D018, F037, F038, K048
INA0726519	05-28-93	D018, F037, F038, K048
INA0726520	06-02-93	D018, F037, F038, K048
INA0726521	06-07-93	D018, F037, F038, K048
INA0726522	06-11-93	D018, F037, F038, K048
INA0726523	06-15-93	D018, F037, F038, K048
INA0726533	06-25-93	D018, F037, F038, K048
INA0728807	12-05-92	F037, K048
INA0728808	01-05-93	F037, K048
INA0728812	01-05-93	F037, K048

APPENDIX D

NEIC SAMPLE ANALYSIS REPORT

NEIC SAMPLE ANALYSIS REPORT

SAMPLE DESCRIPTIONS

On November 3 and 4, 1993, environmental samples were collected at the Shell Oil Company - Wood River Manufacturing Complex in Roxana, Illinois by EPA-NEIC personnel. The samples were transported to EPA-NEIC in a locked cooler. The samples were logged-in at EPA-NEIC on November 5, 1993 and transferred to secured storage coolers.

Three types of samples were received: volatile organic analysis (VOA) grab samples; Toxicity Characteristic Leaching Procedure (TCLP) grab samples; and a total sulfur content in refinery pitch grab sample. All VOA grab samples were in 40 mL amber VOA bottles with preservative; all TCLP grab samples were in eight-ounce, clear glass jars with Teflon-lined lids; and the sulfur content sample was in a 32 ounce paint can. Tables I, II, and III contain descriptions of these samples.

Table I. Description of VOA grab samples*

Tag Number	Date	Time	Sampling Location
N-47351	11/03/93	09:26	Master Box
N-47353	11/03/93	09:26	Master Box
N-47355	11/04/93	11:40	Lube-Desalter
N-47356	11/04/93	11:30	Mixed Crude-Desalter
N-47357	11/04/93	11:51	DU1-Desalter
N-47363	11/04/93	13:40	Master Box
N-47368	11/03/93	13:45	Lube-Desalter
N-47369	11/03/93	15:15	DU1-Desalter
N-47371	11/03/93	14:25	Mixed Crude-Desalter

*In addition, four trip blanks prepared at NEIC were returned intact.

VOLATILE ORGANIC ANALYSIS OF VOA GRAB SAMPLES

The VOA grab samples were analyzed for volatile organic compounds by purge-and-trap gas chromatography-mass spectrometry using EPA Method 8240 as a guideline. All sample analyses were completed within the 14 day hold time specified for preserved samples. The results for VOA analysis are reported in Table IV.

Table II. Description of TCLP grab samples

Tag Number	Date	Time	Sampling Location	Sample Description
N-47352	11/03/93	09:22	Master Box	Cloudy, light yellow/brown liquid with brown suspensions and white particles.
N-47354	11/03/93	09:22	Master Box	Cloudy, light yellow/brown liquid with brown suspensions and white particles.
N-47358	11/04/93	11:51	DU1-Desalter	Cloudy, light brown liquid.
N-47359	11/04/93	11:30	Mixed Crude-Desalter	Cloudy liquid with suspended white particles.
N-47360	11/04/93	11:40	Lube-Desalter	Cloudy, light yellow liquid with suspended white particles.
N-47362	11/04/93	13:40	Master Box	Cloudy, light brown liquid with brown suspensions and particles.
N-47364	11/03/93	13:40	Master Box	Cloudy, light brown liquid with brown suspensions and particles.
N-47365	11/03/93	14:25	Mixed Crude-Desalter	Cloudy, light brown liquid with suspended white particles.
N-47366	11/03/93	13:45	Lube-Desalter	Cloudy, light brown liquid.
N-47367	11/03/93	15:15	DU1-Desalter	Cloudy, light yellow/brown liquid.

Table III. Description of total sulfur content grab sample

Tag Number	Date	Time	Sampling Location	Sample Description
N-47361	11/04/93	12:10	Vacuum Flasher 1	Highly viscous, black liquid.

Table IV. Analytical Results for VOA grab samples*

Tag Number	Compound	Conc.	%RSD	Spike Rec.	LOD
N-47351	Benzene	4.7			0.2
	Toluene	12.0			0.3
	Ethylbenzene	3.7			0.2
	m/p-Xylene	4.2			0.3
	o-Xylene	2.0			0.3
N-47355	Benzene	19.4			0.2
	Toluene	28.3			0.3
	Ethylbenzene	4.1			0.2
	m/p-Xylene	10.1			0.3
	o-Xylene	5.8			0.3
N-47356	Benzene	48.5			0.2
	Toluene	21.7			0.3
	Ethylbenzene	3.9			0.2
	m/p-Xylene	3.5			0.3
	o-Xylene	2.5			0.3
N-47357	Benzene	46.5			0.2
	Toluene	27.8			0.3
	Ethylbenzene	3.8			0.2
	m/p-Xylene	7.7			0.3
	o-Xylene	4.5			0.3
N-47368	Benzene	10.2	1.3	85.4	0.2
	Toluene	20.2	0.8		0.3
	Ethylbenzene	4.8	1.8		0.2
	m/p-Xylene	12.2	1.5		0.3
	o-Xylene	7.5	1.6		0.3
N-47369	Benzene	53.6	5.5	89.5	0.2
	Toluene	32.6	4.3	79.8	0.3
	Ethylbenzene	4.3	2.6	80.0	0.2
	m/p-Xylene	8.5	3.4	76.0	0.3
	o-Xylene	4.9	2.9	92.3	0.3
N-47371	Benzene	49.8			0.2
	Toluene	21.3			0.3
	Ethylbenzene	4.1			0.2
	m/p-Xylene	3.6			0.3
	o-Xylene	2.6			0.3

*Concentrations are in mg/L. %RSD = percent relative standard deviation for triplicate analysis. Spike Rec. = spike recovery for spikes at approximately two to

five times the initial analyte level. LOD = limit of detection.

VOLATILE ORGANIC ANALYSIS OF TCLP SAMPLES

The TCLP grab samples were prepared for analysis using EPA Method 1311 (Toxicity Characteristic Leaching Procedure, 40 CFR § 261, Appendix II) and analyzed for volatile organic compounds by purge-and-trap gas chromatography-mass spectrometry using EPA Method 8240 as a guideline. All samples were subjected to EPA Method 1311 within seven days of collection and all analyses completed within the 28 day holding time. The concentrations for benzene, toluene, ethylbenzene, and xylenes in the TCLP extracts are reported in Table V. Table VI summarizes the TCLP findings for benzene in each of the samples. All of the TCLP extracts contained benzene levels in excess of the regulatory level (0.5 mg/L benzene).

Table V. Analytical Results for TCLP grab samples*

Tag Number	Compound	Conc.	%RSD	Spike Rec.	LOD
N-47352	Benzene	3.7	5.5	76.6	0.2
	Toluene	10.0	3.6		0.3
	Ethylbenzene	2.4	15.9		0.2
	m/*p*-Xylene	3.8	3.8		0.3
	o-Xylene	1.8	3.4		0.3
N-47354	Benzene	3.3	5.9	73.5	0.2
	Toluene	9.4	15.3		0.3
	Ethylbenzene	1.9	9.3		0.2
	m/*p*-Xylene	3.7	15.8		0.3
	o-Xylene	1.7	16.8		0.3
N-47358	Benzene	33.8	25.2	72.1	0.2
	Toluene	21.0	38.7	103.1	0.3
	Ethylbenzene	2.6	48.1	77.9	0.2
	m/*p*-Xylene	5.2	48.5	69.9	0.3
	o-Xylene	3.1	42.1	88.7	0.3
N-47359	Benzene	37.7	3.4	82.5	0.2
	Toluene	18.1	4.3		0.3
	Ethylbenzene	3.0	3.7		0.2
	m/*p*-Xylene	2.6	4.1		0.3
	o-Xylene	2.0	4.1		0.3
N-47360	Benzene	17.8	0.8	84.4	0.2
	Toluene	27.9	1.3		0.3
	Ethylbenzene	4.0	1.5		0.2
	m/*p*-Xylene	9.4	1.2		0.3
	o-Xylene	5.6	2.6		0.3

Table V (Continued). Analytical Results for TCLP grab samples*

Tag Number	Compound	Conc.	%RSD	Spike Rec.	LOD
N-47362	Benzene	2.8	3.4	82.3	0.2
	Toluene	4.2	2.3		0.3
	Ethylbenzene	0.7	49.6		0.2
	m/p-Xylene	2.3	2.5		0.3
	o-Xylene	1.3	2.1		0.3
N-47364	Benzene	2.7	2.0	80.0	0.2
	Toluene	4.1	6.5		0.3
	Ethylbenzene	1.6	3.9		0.2
	m/p-Xylene	2.1	2.8		0.3
	o-Xylene	1.1	4.0		0.3
N-47365	Benzene	3.3	4.3	84.1	0.1
	Toluene	1.8	3.8		0.1
	Ethylbenzene	0.5	3.8		0.1
	m/p-Xylene	0.5	4.6		0.1
	o-Xylene	0.3	2.7		0.1
N-47366	Benzene	1.4	13.1	74.6	0.1
	Toluene	2.6	12.2		0.1
	Ethylbenzene	0.5	12.2		0.1
	m/p-Xylene	1.4	11.3		0.1
	o-Xylene	0.9	11.1		0.1
N-47367	Benzene	48.5	1.2	68.2	0.2
	Toluene	33.8	2.5		0.3
	Ethylbenzene	3.9	2.3		0.2
	m/p-Xylene	7.8	2.6		0.3
	o-Xylene	4.7	2.0		0.3

*Concentrations are in mg/L. %RSD = percent relative standard deviation of triplicate analysis. Spike Rec. = spike recovery for spikes at approximately two to five times the initial analyte level. LOD = limit of detection.

Table VI. Benzene levels for TCLP grab samples*

Tag Number	Benzene (mg/L)	95% Lower Confidence Limit for Benzene (mg/L)	Above Limit
N-47352	3.7	3.3	6.6x
N-47354	3.3	2.9	5.8x
N-47358	33.8	19.4	38.8x
N-47359	37.7	35.5	71.0x
N-47360	17.8	17.5	35.0x
N-47362	2.8	2.6	5.2x
N-47364	2.7	2.6	5.2x
N-47365	3.3	3.0	6.0x
N-47366	1.4	1.1	2.2x
N-47367	48.5	47.5	95.0x

*Above Limit = the factor above the 0.5 mg/L TCLP benzene regulatory limit using the 95% lower confidence limit value.

DETERMINATION OF TOTAL SULFUR CONTENT IN REFINERY PITCH

The refinery pitch grab sample from vacuum flasher 1 was analyzed for total sulfur content by X-ray fluorescence spectroscopy using ASTM Method D2622. Table VII contains the results for the total sulfur analysis.

Table VII. Analytical Results for total sulfur in refinery pitch sample*

Tag Number	Compound	Conc.	%RSD	Spike Rec.	LOD
N-47361	Total Sulfur	1.83%	0.7%	98.1	0.001%

*Concentration is reported in weight percent. %RSD = percent relative standard deviation for triplicate analysis. Spike Rec. = spike recovery for spike at approximately two times the initial analyte level. LOD = limit of detection in weight percent.

APPENDIX E

LDR NOTIFICATION DEFICIENCIES

LAND DISPOSAL RESTRICTION DEFICIENCIES
Shell Oil Company
Roxana, Illinois

Manifest Number	Date	Waste Numbers	Deficiency*
014303-0156	09-23-93	D018, F037, F038, K048	1
IL4591940	09-19-93	F037, F038, K048	1
IL4591941	09-20-93	F037, F038, K048	1
IL4591945	09-27-93	F037. F038, K048	1
IL4591947	09-30-93	F037, F038, K048	1
INA0533187	06-07-92	K048, K049	1, 2
INA0533188	06-09-92	K048, K049	1, 2
INA0533189	06-14-92	K048, K049	1, 2
INA0533190	06-23-92	K048, K049	1, 2
INA0533191	06-21-92	K048, K049	1, 2
INA0533192	06-28-92	K048, K049	1, 2
INA0533193	06-29-92	K048, K049	1, 2
INA0595830	01-15-92	K048, K049	1, 2
INA0595831	01-15-92	K048, K049	1, 2
INA0595833	01-19-92	K048, K049	1, 2
INA0595834	01-20-92	K048, K049	1, 2
INA0595835	02-18-92	K048, K049	1, 2
INA0595837	02-19-92	K048, K049	1, 2
INA0595838	02-20-92	K048, K049	1, 2
INA0595840	03-25-92	K048, K049	1, 2
INA0595841	03-26-92	K048, K049	1, 2
INA0595843	03-27-92	K048, K049	1, 2
INA0595845	03-30-92	K048, K049	1, 2
INA0595873	01-02-92	F037, K048	3

* Deficiency Legend

1 Incomplete Land Disposal Restriction notification - not all hazardous waste numbers identified. (EPA hazardous waste number K048 was not included on any of the manifests or LDR notifications, it has been added to this table were appropriate.)
2 Incomplete Land Disposal Restriction notifications - not all treatment standards identified.
3 No Land Disposal Restriction notifications was sent to the treatment, storage, or disposal facility.
4 A copy of the Land Disposal Restriction notification was not retained on-site.

Manifest Number	Date	Waste Numbers	Deficiency*
INA0595874	01-02-92	F037, K048	3
INA0595875	01-02-92	F037, K048	3
INA0595877	01-11-92	F037, K048	3
INA0595878	01-03-92	F037, K048	3
INA0595879	01-03-92	F037, K048	1
INA0595880	01-07-92	F037, K048	3
INA0595882	01-07-92	F037, K048	3
INA0595883	01-11-92	F037, K048	3
INA0595884	01-11-92	F037, K048	3
INA0595885	01-13-92	F037, K048	3
INA0595886	01-13-92	F037, K048	3
INA0595887	01-14-92	F037, K048	3
INA0595888	01-16-92	F037, K048	3
INA0595889	01-17-92	F037, K048	3
INA0595890	01-19-92	F037, K048	3
INA0595891	01-21-92	F037, K048	3
INA0595892	01-22-92	F037, K048	3
INA0595894	01-26-92	F037, K048	3
INA0595895	01-27-92	F037, K048	3
INA0595896	01-28-92	F037, K048	3
INA0595897	01-28-92	F037, K048	3
INA0595898	01-27-92	F037, K048	3
INA0595899	01-31-92	F037, K048	3
INA0595900	01-31-92	F037, K048	3
INA0595901	02-03-92	F037, K048	3

* Deficiency Legend

1 Incomplete Land Disposal Restriction notification - not all hazardous waste numbers identified. (EPA hazardous waste number K048 was not included on any of the manifests or LDR notifications, it has been added to this table were appropriate.)
2 Incomplete Land Disposal Restriction notifications - not all treatment standards identified.
3 No Land Disposal Restriction notifications was sent to the treatment, storage, or disposal facility.
4 A copy of the Land Disposal Restriction notification was not retained on-site.

Manifest Number	Date	Waste Numbers	Deficiency*
INA0595902	02-04-92	F037, K048	3
INA0595903	02-05-92	F037, K048	3
INA0595904	02-06-92	F037, K048	3
INA0595905	02-07-92	F037, K048	3
INA0595906	02-10-92	F037, K048	3
INA0595907	02-10-92	F037, K048	3
INA0595908	02-11-92	F037, K048	3
INA0595909	02-11-92	F037, K048	3
INA0595910	02-12-92	F037, K048	3
INA0595911	02-14-92	F037, K048	3
INA0595912	02-17-92	F037, K048	3
INA0595913	02-18-92	F037, K048	3
INA0595916	01-03-92	F037, K048	3
INA0595917	02-18-92	F037, K048	3
INA0595918	02-19-92	F037, K048	3
INA0595920	02-20-92	F037, K048	3
INA0595921	02-20-92	F037, K048	3
INA0595922	02-24-92	F037, K048	3
INA0595923	02-24-92	F037, K048	3
INA0595924	02-25-92	F037, K048	3
INA0595925	02-25-92	F037, K048	3
INA0595927	02-28-92	F037, K048	3
INA0595926	02-26-92	F037, K048	3
INA0595928	03-02-92	F037, K048	3
INA0595929	03-02-92	F037, K048	3

* Deficiency Legend

1 Incomplete Land Disposal Restriction notification - not all hazardous waste numbers identified. (EPA hazardous waste number K048 was not included on any of the manifests or LDR notifications, it has been added to this table were appropriate.)
2 Incomplete Land Disposal Restriction notifications - not all treatment standards identified.
3 No Land Disposal Restriction notifications was sent to the treatment, storage, or disposal facility.
4 A copy of the Land Disposal Restriction notification was not retained on-site.

LAND DISPOSAL RESTRICTION DEFICIENCIES (continued)

Manifest Number	Date	Waste Numbers	Deficiency*
INA0595930	03-04-92	F037, K048	3
INA0595931	03-03-92	F037, K048	3
INA0595932	03-04-92	F037, K048	3
INA0595933	03-04-92	F037, K048	3
INA0595934	03-05-92	F037, K048	3
INA0595935	03-07-92	F037, K048	3
INA0595937	03-09-92	F037, K048	3
INA0595940	03-09-92	F037, K048	3
INA0595941	03-10-92	F037, K048	3
INA0595942	03-10-92	F037, K048	3
INA0595943	03-12-92	F037, K048	3
INA0595944	03-13-92	F037, K048	3
INA0595945	03-13-92	F037, K048	3
INA0595946	03-16-92	F037, K048	3
INA0595947	03-16-92	F037, K048	3
INA0595948	03-17-92	F037, K048	3
INA0595949	03-17-92	F037, K048	3
INA0595950	03-18-92	F037, K048	3
INA0595952	03-19-92	F037, K048	3
INA0595953	03-20-92	F037, K048	3
INA0595954	03-20-92	F037, K048	3
INA0595955	03-20-92	F037, K048	3
INA0595956	03-23-92	F037, K048	3
INA0595957	03-23-92	F037, K048	3
INA0595958	03-23-92	F037, K048	3

* Deficiency Legend

1 Incomplete Land Disposal Restriction notification - not all hazardous waste numbers identified. (EPA hazardous waste number K048 was not included on any of the manifests or LDR notifications, it has been added to this table were appropriate.)
2 Incomplete Land Disposal Restriction notifications - not all treatment standards identified.
3 No Land Disposal Restriction notifications was sent to the treatment, storage, or disposal facility.
4 A copy of the Land Disposal Restriction notification was not retained on-site.

LAND DISPOSAL RESTRICTION DEFICIENCIES (continued)

Manifest Number	Date	Waste Numbers	Deficiency*
INA0595959	03-23-92	F037, K048	3
INA0595960	03-23-92	F037, K048	3
INA0595961	03-24-92	F037, K048	3
INA0595962	03-25-92	F037, K048	3
INA0595963	03-25-92	F037, K048	3
INA0595964	03-26-92	F037, K048	3
INA0595965	03-26-92	F037, K048	3
INA0595966	03-27-92	F037, K048	3
INA0595967	03-30-93	F037, K048	3
INA0595968	03-31-92	F037, K048	3
INA0595969	03-30-92	F037, K048	3
INA0595970	03-31-92	F037, K048	3
INA0595971	03-31-92	F037, K048	3
INA0596054	06-05-92	K048, K049	1, 2
INA0684541	07-22-92	K048, K049	1, 2
INA0684542	08-03-92	K048, K049	1, 2
INA0684623	12-28-92	D018, F037, F038, K048	1
INA0684624	12-28-92	D018, F037, F038, K048	1
INA0684626	01-04-93	D018, F037, F038, K048	1
INA0684627	01-04-93	D018, F037, F038, K048	1
INA0684628	01-04-93	D018, F037, F038, K048	1
INA0684629	12-29-92	D018, F037, F038, K048	1
INA0684651	08-30-92	K048, K049	1, 2
INA0684652	09-09-92	K048, K049	1, 2
INA0684653	09-14-92	K048, K049	1, 2

* Deficiency Legend

1 Incomplete Land Disposal Restriction notification - not all hazardous waste numbers identified. (EPA hazardous waste number K048 was not included on any of the manifests or LDR notifications, it has been added to this table were appropriate.)
2 Incomplete Land Disposal Restriction notifications - not all treatment standards identified.
3 No Land Disposal Restriction notifications was sent to the treatment, storage, or disposal facility.
4 A copy of the Land Disposal Restriction notification was not retained on-site.

Manifest Number	Date	Waste Numbers	Deficiency*
INA0684654	09-12-92	K048, K049	1, 2
INA0684655	09-22-92	K048, K049	1, 2
INA0684657	10-05-92	K048, K049	1, 2
INA0684658	10-08-92	K048, K049	1, 2
INA0684659	10-13-92	K048, K049	1, 2
INA0684660	10-16-92	K048, K049	1, 2
INA0684661	11-19-92	K048, K049	1, 2
INA0684662	11-30-92	K048, K049	1, 2
INA0684670	11-17-92	K048, K049	1, 2
INA0726439	01-18-93	D018, F037, F038, K048	1
INA0726440	01-18-93	D018, F037, F038, K048	1
INA0726442	02-03-93	D018, F037, F038, K048	1
INA0726443	02-04-93	D018, F037, F038, K048	1
INA0726444	02-09-93	D018, F037, F038, K048	1
INA0726445	02-09-93	D018, F037, F038, K048	1
INA0726446	02-15-93	D018, F037, F038, K048	1
INA0726447	02-15-93	D018, F037, F038, K048	1
INA0726448	02-22-93	D018, F037, F038, K048	1
INA0726449	02-24-93	D018, F037, F038, K048	1
INA0726450	02-24-93	D018, F037, F038, K048	1
INA0726451	03-02-93	D018, F037, F038, K048	1
INA0726452	03-02-93	D018, F037, F038, K048	1
INA0726453	03-04-93	D018, F037, F038, K048	1
INA0726454	03-11-93	D018, F037, F038, K048	1
INA0726455	03-11-93	D018, F037, F038, K048	1

* Deficiency Legend

1 Incomplete Land Disposal Restriction notification - not all hazardous waste numbers identified. (EPA hazardous waste number K048 was not included on any of the manifests or LDR notifications, it has been added to this table were appropriate.)
2 Incomplete Land Disposal Restriction notifications - not all treatment standards identified.
3 No Land Disposal Restriction notifications was sent to the treatment, storage, or disposal facility.
4 A copy of the Land Disposal Restriction notification was not retained on-site.

Manifest Number	Date	Waste Numbers	Deficiency*
INA0726456	03-16-93	D018, F037, F038, K048	1
INA0726494	03-19-93	D018, F037, F038, K048	1
INA0726495	03-19-93	D018, F037, F038, K048	1
INA0726496	03-22-93	D018, F037, F038, K048	1
INA0726502	03-26-93	D018, F037, F038, K048	1
INA0726503	03-31-93	D018, F037, F038, K048	1
INA0726504	03-31-93	D018, F037, F038, K048	1
INA0726505	04-05-93	D018, F037, F038, K048	1
INA0726506	04-05-93	D018, F037, F038, K048	1
INA0726507	04-08-93	D018, F037, F038, K048	1
INA0726508	04-15-93	D018, F037, F038, K048	1
INA0726509	04-19-93	D018, F037, F038, K048	1
INA0726510	04-21-93	D018, F037, F038, K048	1
INA0726511	04-23-93	D018, F037, F038, K048	1
INA0726513	05-03-93	D018, F037, F038, K048	1
INA0726514	05-10-93	D018. F037. F038, K048	1
INA0726515	05-14-93	D018, F037, F038, K048	1
INA0726516	05-17-93	D018, F037, F038, K048	1
INA0726517	05-20-93	D018, F037, F038, K048	1
INA0726518	05-26-93	D018, F037, F038, K048	1
INA0726519	05-28-93	D018, F037, F038, K048	1
INA0726520	06-02-93	D018, F037, F038, K048	1
INA0726521	06-07-93	D018, F037, F038, K048	1
INA0726522	06-11-93	D018, F037, F038, K048	1
INA0726523	06-15-93	D018, F037, F038, K048	1

* Deficiency Legend

1 Incomplete Land Disposal Restriction notification - not all hazardous waste numbers identified. (EPA hazardous waste number K048 was not included on any of the manifests or LDR notifications, it has been added to this table were appropriate.)
2 Incomplete Land Disposal Restriction notifications - not all treatment standards identified.
3 No Land Disposal Restriction notifications was sent to the treatment, storage, or disposal facility.
4 A copy of the Land Disposal Restriction notification was not retained on-site.

LAND DISPOSAL RESTRICTION DEFICIENCIES (continued)

Manifest Number	Date	Waste Numbers	Deficiency*
INA0726533	06-25-93	D018, F037, F038, K048	1
INA0728807	12-05-92	F037, K048	1, 4
INA0728808	01-05-93	F037, K048	1
INA0728812	01-05-93	F037, K048	1, 4

* Deficiency Legend

1 Incomplete Land Disposal Restriction notification - not all hazardous waste numbers identified. (EPA hazardous waste number K048 was not included on any of the manifests or LDR notifications, it has been added to this table were appropriate.)
2 Incomplete Land Disposal Restriction notifications - not all treatment standards identified.
3 No Land Disposal Restriction notifications was sent to the treatment, storage, or disposal facility.
4 A copy of the Land Disposal Restriction notification was not retained on-site.

APPENDIX F

MANIFESTS AND LDR NOTIFICATIONS
(SEE VOLUME 3)

APPENDICIES

A Exit Conference Attendance Lists
B UST Notification

APPENDIX A

EXIT CONFERENCE ATTENDANCE LISTS

Closing Contacts

NAME	COMPANY	Number
KEN GARING	EPA-NEIC	(303) 236-5124
Daren Vanlerberghe	EPA-NEIC	(303) 236-5124
Clyde Wiseman	Shell	(618) 255-3375
Lynda Tekrony	EPA-NEIC	(303) 236-5124
Anne Billington	EPA-NEIC	(303) 236-5124
Gary Spears	Shell	618-255-3375
Joe Brewster	Shell	618-255-2478
LARRY HEUCATTER	SHELL	618 255-2448
Jeff Deerhake	Shell	255-2369
Chris Calhoun	IEPA	346-5120
JOHN JUSTICE	IEPA	618/346-5120
Jay Ranken	Shell	618 255 2737
Colleen Hutchings	Shell	618-255-2265
ERIC PETERSEN	Shell	618-255-3190
Randy Zerkel	Shell	618-255-2734
ROBERT MILLER	SHELL	(618) 255-2605
KENT PECCOLA	Shell	(618) 255-2758
Robert Gillette	Shell	(618) 255-2755
Gina Nicholson	Shell	618-255-2512
Jeff Benhenck	State of Ill EPA	618-346-5120
SERGIO SIAO	EPA-NEIC	(303) 236-5124
E Gayle Johnson	Shell	(618) 255 2201

APPENDIX B

UST NOTIFICATION

SHELL
5-D

Shell Oil Company

P. O. Box 262
Wood River, IL 62095

October 9, 1990

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Division of Petroleum/Chemical Safety
Illinois State Fire Marshal
1035 Stevenson Drive
Springfield, IL 62703-4259

Dear Sirs:

SUBJECT: UNDERGROUND STORAGE TANKS:
OSFM ID NO. 6-009240

Attached is an updated "Notification of Underground Storage Tanks". This update adds a newly-discovered tank, V-1707, to our previous notification list. Vessel V-1707 was discovered in early September, and since it is not a "flow-through" process vessel, it must be removed.

This tank was installed to catch drips from the now-idled DMK unit pump pads. Since we were not aware of its existence, it was not included in any of our previous submittals. We plan to complete removal of the tank by March 1, 1991.

The information on the attached form should now supersede all information previously submitted (last notification was December 5, 1989). Please contact Eric Petersen for further information at (618) 255-3190.

Very truly yours,

J. N. Brewster

J. N. Brewster
Manager Environmental Conservation
Wood River Manufacturing Complex

Attachment

cc: Mr. Wayne Sensel, Tank Specialist
Illinois State Fire Marshall
3150 Executive Park Drive
Springfield, IL 62703-4599

bc: E. S. Petersen
EC File 5261/Certified Letter 572

Notification for Underground Storage Tanks

FORM APPROVED
OMB NO. 2050-0049
APPROVAL EXPIRES 6-30-88

FOR TANKS IN **IL**

RETURN COMPLETED FORM TO: UST Coordinator, Division of Fire Prevention, P.O. Box 3803, Springfield, IL 62708-3803

STATE USE ONLY

I.D. Number

Date Received

GENERAL INFORMATION

Notification is required by Federal law for all underground tanks that have been used to store regulated substances since January 1, 1974, that are in the ground as of May 8, 1986, or that are brought into use after May 8, 1986. The information requested is required by Section 9002 of the Resource Conservation and Recovery Act, (RCRA), as amended.

The primary purpose of this notification program is to locate and evaluate underground tanks that store or have stored petroleum or hazardous substances. It is expected that the information you provide will be based on reasonably available records, or, in the absence of such records, your knowledge, belief, or recollection.

Who Must Notify? Section 9002 of RCRA, as amended, requires that, unless exempted, owners of underground tanks that store regulated substances must notify designated State or local agencies of the existence of their tanks. Owner means—

(a) in the case of an underground storage tank in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances, and

(b) in the case of any underground storage tank in use before November 8, 1984, but no longer in use on that date, any person who owned such tank immediately before the discontinuation of its use.

What Tanks Are Included? Underground storage tank is defined as any one or combination of tanks that (1) is used to contain an accumulation of "regulated substances," and (2) whose volume (including connected underground piping) is 10% or more beneath the ground. Some examples are underground tanks storing: 1. gasoline, used oil, or diesel fuel, and 2. industrial solvents, pesticides, herbicides or fumigants.

What Tanks Are Excluded? Tanks removed from the ground are not subject to notification. Other tanks excluded from notification are:

1. farm or residential tanks of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;
2. tanks used for storing heating oil for consumptive use on the premises where stored;
3. septic tanks;
4. pipeline facilities (including gathering lines) regulated under the Natural G Pipeline Safety Act of 1968, or the Hazardous Liquid Pipeline Safety Act of 1979, or which is an intrastate pipeline facility regulated under State laws;
5. surface impoundments, pits, ponds, or lagoons;
6. storm water or waste water collection systems;
7. flow-through process tanks;
8. liquid traps or associated gathering lines directly related to oil or gas production ar gathering operations;
9. storage tanks situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above t surface of the floor.

What Substances Are Covered? The notification requirements apply to under ground storage tanks that contain regulated substances. This includes any substance defined as hazardous in section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), with the exception those substances regulated as hazardous waste under Subtitle C of RCRA. It al includes petroleum, e.g., crude oil or any fraction thereof which is liquid at standa conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

Where To Notify? Completed notification forms should be sent to the addre given at the top of this page.

When To Notify? 1. Owners of underground storage tanks in use or that have been taken out of operation after January 1, 1974, but still in the ground, must notify by May 8, 1986. 2. Owners who bring underground storage tanks into use after May 1986, must notify within 30 days of bringing the tanks into use.

Penalties: Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty not to exceed $10,000 for each tank for which notification is not given or for which false information is submitted.

INSTRUCTIONS

Please type or print in ink all items except "signature" in Section V. **This form must be completed for each location containing underground storage tanks.** If more than 5 tanks are owned at this location, photocopy the reverse side, and staple continuation sheets to this form.

Indicate number of continuation sheets attached: 5

I. OWNERSHIP OF TANK(S)

Owner Name (Corporation, Individual, Public Agency, or Other Entity): Shell Oil Company

Street Address: SA-11A and Route 111

County: Madison

City: Roxana | State: IL | ZIP Code: 62084

Area Code: 618 | Phone Number: 254-7371

Type of Owner (*Mark all that apply* ☒)

- ☐ Current
- ☐ Former
- ☐ State or Local Gov't
- ☐ Federal Gov't (GSA facility I.D. no. _____)
- ☒ Private or Corporate
- ☐ Ownership uncertain

II. LOCATION OF TANK(S)

(If same as Section I, mark box here ☐)

Facility Name or Company Site Identifier, as applicable

Street Address or State Road, as applicable

County

City (nearest) | State | ZIP Code

9 inerted as of 1/83

Indicate number of tanks at this location: 10

Mark box here if tank(s) are located on land within an Indian reservation or on other Indian trust lands ☐

III. CONTACT PERSON AT TANK LOCATION

Name (If same as Section I, mark box here ☐): J. N. Brewster

Job Title: Manager Environmental Conservation | Area Code: 618 | Phone Number: 254-7371

IV. TYPE OF NOTIFICATION

☒ Mark box here only if this is an amended or subsequent notification for this location.

V. CERTIFICATION (Read and sign after completing Section VI.)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative: J.N. Brewster, Manager Environmental Conservation | Signature: J. N. Brewster | Date Signed: 10/9/90

CONTINUE ON REVERSE SIDE

EPA Form 7530-1 (11-85)

VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS (*Complete for each tank at this location.*)

Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)		Tank No. CH-211	Tank No. I-6	Tank No. I-7	Tank No. I-11	Tank No. 4
1. Status of Tank (*Mark all that apply* ☒)	Currently in Use	☐	☐	☐	☐	☐
	Temporarily Out of Use	☐	☐	☐	☐	☐
	Permanently Out of Use	X	X	X	X	X
	Brought into Use after 5/8/86	☐	☐	☐	☐	☐
2. Estimated Age (Years)		43	44	Unknown	Unknown	Unknown
3. Estimated Total Capacity (Gallons)		1,454	12,784	12,784	11,280	564
4. Material of Construction (*Mark one* ☒)	Steel	X	X	X	X	X
	Concrete	☐	☐	☐	☐	☐
	Fiberglass Reinforced Plastic	☐	☐	☐	☐	☐
	Unknown	☐	☐	☐	☐	☐
	Other, Please Specify					
5. Internal Protection (*Mark all that apply* ☒)	Cathodic Protection	☐	☐	☐	☐	☐
	Interior Lining (e.g., epoxy resins)	☐	☐	☐	☐	☐
	None	X	X	X	X	X
	Unknown	☐	☐	☐	☐	☐
	Other, Please Specify					
6. External Protection (*Mark all that apply* ☒)	Cathodic Protection	☐	☐	☐	☐	☐
	Painted (e.g., asphaltic)	☐	☐	☐	☐	☐
	Fiberglass Reinforced Plastic Coated	☐	☐	☐	☐	☐
	None	☐	☐	☐	☐	☐
	Unknown	☐	☐	☐	☐	☐
	Other, Please Specify	Possible red lead & epoxy	Possible coal tar epoxy	Possible coal tar epoxy	Possible coal tar epoxy	Possible coal tar epoxy
7. Piping (*Mark all that apply* ☒)	Bare Steel	☐	☐	☐	☐	☐
	Galvanized Steel	☐	☐	☐	☐	☐
	Fiberglass Reinforced Plastic	☐	☐	☐	☐	☐
	Cathodically Protected	☐	☐	☐	☐	☐
	Unknown	X	X	X	X	X
	Other, Please Specify					
8. Substance Currently or Last Stored in Greatest Quantity by Volume (*Mark all that apply* ☒)	a. Empty	X	X	X	X	X
	b. Petroleum					
	Diesel	☐	X	X	X	X
	Kerosene	☐	☐	☐	☐	☐
	Gasoline (including alcohol blends)	☐	☐	☐	☐	☐
	Used Oil	X	☐	☐	☐	☐
	Other, Please Specify					
	c. Hazardous Substance	☐	☐	☐	☐	☐
	Please Indicate Name of Principal CERCLA Substance OR Chemical Abstract Service (CAS) No.					
	Mark box ☒ if tank stores a mixture of substances	☐	☐	☐	☐	☐
	d. Unknown	☐	☐	☐	☐	☐
9. Additional Information (for tanks permanently taken out of service)	a. Estimated date last used (mo/yr)	10/30/89	10/27/89	11/1/89	11/1/89	11/9/89
	b. Estimated quantity of substance remaining (gal.)	0	0	0	0	0
	c. Mark box ☒ if tank was filled with inert material (e.g., sand, concrete)	☐	☐	☐	☐	☐

EPA Form 7530-1 (11-85) Reverse

☆ U.S. Government Printing Office: 1986—496-735

VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location.)

Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)	Tank No. N-95	Tank No. N-97	Tank No. N-99	Tank No. N-100	Tank No. N-101
1. Status of Tank (Mark all that apply ☒)					
Currently in Use					
Temporarily Out of Use					
Permanently Out of Use	X	X	X	X	X
Brought into Use after 5/8/86					
2. Estimated Age (Years)	Unknown	Unknown	Unknown	Unknown	Unknown
3. Estimated Total Capacity (Gallons)	10,626	10,626	10,626	10,626	10,626
4. Material of Construction (Mark one ☒)					
Steel	X	X	X	X	X
Concrete					
Fiberglass Reinforced Plastic					
Unknown					
Other, Please Specify					
5. Internal Protection (Mark all that apply ☒)					
Cathodic Protection					
Interior Lining (e.g., epoxy resins)					
None	X	X	X	X	X
Unknown					
Other, Please Specify					
6. External Protection (Mark all that apply ☒)					
Cathodic Protection					
Painted (e.g., aspnaltic)					
Fiberglass Reinforced Plastic Coated					
None					
Unknown	X	X	X	X	X
Other, Please Specify					
7. Piping (Mark all that apply ☒)					
Bare Steel					
Galvanized Steel					
Fiberglass Reinforced Plastic					
Cathodically Protected					
Unknown	X	X	X	X	X
Other, Please Specify					
8. Substance Currently or Last Stored in Greatest Quantity by Volume (Mark all that apply ☒)					
a. Empty	X	X	X	X	X
b. Petroleum					
Diesel					
Kerosene					
Gasoline (including alcohol blends)					
Used Oil					
Other, Please Specify	Lube oils	Oil-based additive	Oil-based additive	Oil-based additive	
c. Hazardous Substance					X
Please Indicate Name of Principal CERCLA Substance OR					Naphthenic Acid
Chemical Abstract Service (CAS) No.					
Mark box ☒ if tank stores a mixture of substances					
d. Unknown					
9. Additional Information (for tanks permanently taken out of service)					
a. Estimated date last used (mo/yr)	1 / 83	1 / 83	1 / 83	1 / 83	1 / 83
b. Estimated quantity of substance remaining (gal.)	0	0	0	0	0
c. Mark box ☒ if tank was filled with inert material (e.g., sand, concrete)	X	X	X	X	X

VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location.)

Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)	Tank No. N-102	Tank No. N-103	Tank No. N-108	Tank No. N-109	Tank No. RR-41
1. Status of Tank (Mark all that apply ☒)					
Currently in Use					
Temporarily Out of Use					
Permanently Out of Use	X	X	X	X	X
Brought into Use after 5/8/86					
2. Estimated Age (Years)	Unknown	Unknown	Unknown	Unknown	30
3. Estimated Total Capacity (Gallons)	10,290	10,626	10,626	10,626	2,133
4. Material of Construction (Mark one ☒)					
Steel	X	X	X	X	X
Concrete					
Fiberglass Reinforced Plastic					
Unknown					
Other, Please Specify					
5. Internal Protection (Mark all that apply ☒)					
Cathodic Protection					
Interior Lining (e.g., epoxy resins)					
None	X	X	X	X	X
Unknown					
Other, Please Specify					
6. External Protection (Mark all that apply ☒)					
Cathodic Protection					
Painted (e.g., aspnaltic)					
Fiberglass Reinforced Plastic Coated					
None					
Unknown	X	X	X	X	
Other, Please Specify					Possible coal tar epoxy
7. Piping (Mark all that apply ☒)					
Bare Steel					
Galvanized Steel					
Fiberglass Reinforced Plastic					
Cathodically Protected					
Unknown	X	X	X	X	X
Other, Please Specify					
8. Substance Currently or Last Stored in Greatest Quantity by Volume (Mark all that apply ☒)					
a. Empty	X	X	X	X	X
b. Petroleum					
Diesel					
Kerosene					
Gasoline (including alcohol blends)					X
Used Oil					
Other, Please Specify	Oil-based additive	Oil-based additive	Oil-based additive	Oil-based additive	
c. Hazardous Substance					
Please Indicate Name of Principal CERCLA Substance OR					
Chemical Abstract Service (CAS) No.					
Mark box ☒ if tank stores a mixture of substances					
d. Unknown					
9. Additional Information (for tanks permanently taken out of service)					
a. Estimated date last used (mo/yr)	1 / 83	1 / 83	1 / 83	1 / 83	Removal Date 10/23/89
b. Estimated quantity of substance remaining (gal.)	0	0	0	0	0
c. Mark box ☒ if tank was filled with inert material (e.g., sand, concrete)	X	X	X	X	

Owner Name (from Section I) Shell Oil Company Location (from Section II) Roxana Page No. 4 of 7 Pages

VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location.)

Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)	Tank No. RR-42	Tank No. RR-43	Tank No. 1	Tank No. 2	Tank No. 3
1. Status of Tank (Mark all that apply ☒) Currently in Use	☐	☐	☐	☐	☐
Temporarily Out of Use	☐	☐	☐	☐	☐
Permanently Out of Use	☒	☒	☒	☒	☒
Brought into Use after 5/8/86	☐	☐	☐	☐	☐
2. Estimated Age (Years)	30	27	40	40	30
3. Estimated Total Capacity (Gallons)	6,204	6,204	564	736	740
4. Material of Construction (Mark one ☒) Steel	☒	☒	☒	☒	☒
Concrete	☐	☐	☐	☐	☐
Fiberglass Reinforced Plastic	☐	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify					
5. Internal Protection (Mark all that apply ☒) Cathodic Protection	☐	☐	☐	☐	☐
Interior Lining (e.g., epoxy resins)	☐	☐	☐	☐	☐
None	☒	☒	☒	☒	☒
Unknown	☐	☐	☐	☐	☐
Other, Please Specify					
6. External Protection (Mark all that apply ☒) Cathodic Protection	☐	☐	☐	☐	☐
Painted (e.g., asphaltic)	☐	☐	☐	☐	☐
Fiberglass Reinforced Plastic Coated	☐	☐	☐	☐	☐
None	☐	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify	Possible coal tar epoxy	Possible coal tar epoxy	Possible coal tar epoxy	Possible coal tar epoxy	Possible coal tar epoxy
7. Piping (Mark all that apply ☒) Bare Steel	☐	☐	☐	☐	☐
Galvanized Steel	☐	☐	☐	☐	☐
Fiberglass Reinforced Plastic	☐	☐	☐	☐	☐
Cathodically Protected	☐	☐	☐	☐	☐
Unknown	☒	☒	☒	☒	☒
Other, Please Specify					
8. Substance Currently or Last Stored in Greatest Quantity by Volume (Mark all that apply ☒) a. Empty	☒	☒	☒	☒	☒
b. Petroleum					
Diesel	☐	☐	☐	☐	☒
Kerosene	☐	☐	☐	☐	☐
Gasoline (including alcohol blends)	☒	☒	☒	☐	☐
Used Oil	☐	☐	☐	☒	☐
Other, Please Specify					
c. Hazardous Substance	☐	☐	☐	☐	☐
Please Indicate Name of Principal CERCLA Substance OR Chemical Abstract Service (CAS) No.					
Mark box ☒ if tank stores a mixture of substances	☐	☐	☐	☐	☐
d. Unknown	☐	☐	☐	☐	☐
9. Additional Information (for tanks permanently taken out of service) Date tanks removed					
a. Estimated ~~date last used~~ (mo/yr)	10/20/89	10/19/89	11/14/89	11/8/89	11/6/89
b. Estimated quantity of substance remaining (gal.)	0	0	0	0	0
c. Mark box ☒ if tank was filled with inert material (e.g., sand, concrete)	☐	☐	☐	☐	☐

☆ U.S. Government Printing Office: 1986—496-735

Owner Name (from Section I) Shell Oil Company Location (from Section II) Roxana Page No. 5 of 5 Pages

VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location.)

Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)	Tank No. V-1707	Tank No.	Tank No.	Tank No.	Tank No.
1. Status of Tank (Mark all that apply ☒) Currently in Use	☐	☐	☐	☐	☐
Temporarily Out of Use	☐	☐	☐	☐	☐
Permanently Out of Use	☒	☐	☐	☐	☐
Brought into Use after 5/8/86	☐	☐	☐	☐	☐
2. Estimated Age (Years)	51				
3. Estimated Total Capacity (Gallons)	1713				
4. Material of Construction (Mark one ☒) Steel	☒	☐	☐	☐	☐
Concrete	☐	☐	☐	☐	☐
Fiberglass Reinforced Plastic	☐	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify					
5. Internal Protection (Mark all that apply ☒) Cathodic Protection	☐	☐	☐	☐	☐
Interior Lining (e.g., epoxy resins)	☐	☐	☐	☐	☐
None	☐	☐	☐	☐	☐
Unknown	☒	☐	☐	☐	☐
Other, Please Specify					
6. External Protection (Mark all that apply ☒) Cathodic Protection	☒	☐	☐	☐	☐
Painted (e.g., asphaltic)	☒	☐	☐	☐	☐
Fiberglass Reinforced Plastic Coated	☐	☐	☐	☐	☐
None	☐	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify					
7. Piping (Mark all that apply ☒) Bare Steel	☒	☐	☐	☐	☐
Galvanized Steel	☐	☐	☐	☐	☐
Fiberglass Reinforced Plastic	☐	☐	☐	☐	☐
Cathodically Protected	☐	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify	Bitchmastic #50 coating				
8. Substance Currently or Last Stored in Greatest Quantity by Volume (Mark all that apply ☒) a. Empty	☐	☐	☐	☐	☐
b. Petroleum					
Diesel	☐	☐	☐	☐	☐
Kerosene	☐	☐	☐	☐	☐
Gasoline (including alcohol blends)	☐	☐	☐	☐	☐
Used Oil	☐	☐	☐	☐	☐
Other, Please Specify					
c. Hazardous Substance	☒	☐	☐	☐	☐
Please Indicate Name of Principal CERCLA Substance OR Chemical Abstract Service (CAS) No.	Acetone 67-64-1				
Mark box ☒ if tank stores a mixture of substances	☐	☐	☐	☐	☐
d. Unknown	☐	☐	☐	☐	☐
9. Additional Information (for tanks permanently taken out of service)					
a. Estimated date last used (mo/yr)	6/80	/	/	/	/
b. Estimated quantity of substance remaining (gal.)	None				
c. Mark box ☒ if tank was filled with inert material (e.g., sand, concrete)	☐	☐	☐	☐	☐

APPENDICES

A Exit Conference Attendance List
B Release Notifications
C Storage Tank Emission Calculations
D Flare Emission Calculations
E Cobalt Threshold Calculation
F Cobalt Updated Form R
G Molybdenum Trioxide Updated Form R

APPENDIX A

EXIT CONFERENCE ATTENDANCE LIST

Closing Conference - 11-5-93

NAME	COMPANY	Number
KEN GARING	EPA-NEIC	(303) 236-5124
Daren Vanlerberghe	EPA-NEIC	(303) 236-5124
Clyde Wiseman	Shell	(618) 255-3375
Lynda Tekrony	EPA-NEIC	(303) 236-5124
Anne Billington	EPA-NEIC	(303) 236-5124
Gary Spears	Shell	618-255-3375
Joe Brewster	Shell	618-255-2478
LARRY HEUCATTER	SHELL	618 255-2448
Jeff Deerhake	Shell	255-2369
Chris Calhoun	IEPA	346-5120
JOHN JUSTICE	IEPA	618/346-5120
Jay Ranken	Shell	618 255 2737
Colleen Hutchings	Shell	618-255-2265
ERIC PETERSEN	Shell	618-255-3190
Randy Zerkel	Shell	618-255-2734
ROBERT MILLER	SHELL	(618) 255-2405
KENT PECCOLA	Shell	(618) 255-2758
Robert Gillette	Shell	(618) 255-2755
Gina Nicholson	Shell	618-255-2512
Jeff Benhenck	State of Ill EPA	618-346-5120
SERGIO SIAO	EPA-NEIC	(303) 236-5124
E Gayle Johnson	Shell	(618) 255 2201

Shell Oil Company

P. O. Box 262
Wood River, IL 62095

September 7, 1990

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Dean Schlee
Illinois Emergency Services & Disaster Agency
110 East Adams Street
Springfield, IL 62706

Mr. Lanny Darr, Coordinator
Madison County Emergency Services and Disaster Agency
201 Hillsboro Street
Edwardsville, IL 62025

Mr. Tom Powell
Illinois Environmental Protection Agency
2009 Mall Street
Collinsville, IL 62234

Gentlemen:

SUBJECT: ON-SITE CERCLA REPORTABLE QUANTITY RELEASE NOTIFICATION
IESDA INCIDENT - 902411

This letter is a follow-up to our telephone reports on a spill of sodium hydroxide to the ground at the Wood River Manufacturing Complex. The information normally requested by IESDA is included.

1. Chemical Name or Substance Involved in the Release

   Sodium Hydroxide

2. CERCLA Extremely Hazardous Substances Released

   None.

3. Estimate of Quantity of CERCLA Hazardous Substance Released

   Approximately 2,000 pounds of sodium hydroxide were spilled.

4. Date and Time of the Release

   The release began at 1:00 p.m. on August 21, 1990 when a hole developed three feet from the top of tank D-21.

5. Duration of the Release

The release was stopped within 45 minutes (1:45 p.m. on August 21, 1990) by lowering the level of material in the tank below the leak.

6. Media into which the Release Occurred

The release was confined to the ground inside the tank yard on the north side of D-21 on Shell property in the Light Oil Treating area.

7. Notifications Made

Upon volume of release determination it was determined that there was an exceedance of the reportable quantity for sodium hydroxide. We immediately notified the National Response Center at 2:35 p.m., the Illinois ESDA at 2:39 p.m., and made a courtesy call to the Madison County ESDA (LERC) at 2:50 p.m.

8. Probable Cause of the Release

A hole developed in the side of tank D-21 due to external corrosion under the tank insulation.

9. Actions taken to Respond to and Contain the Release

The leak was observed at its conception and the affected area was flagged off. The liquid level was lowered in the tank below the leak. A vacuum truck was used to pick up and transfer the spilled caustic to a sump for reuse.

10. Measures Taken to Prevent a Recurrence

The tank will be low gauged, stripped of insulation and inspected for integrity prior to returning it to service.

11. Resultant Known or Anticipated Exposure Health Risks and Community Impact

There are no known or anticipated exposure health risks associated with this release. There was no public exposure from this on-property release. Sodium hydroxide has negligible vapor pressure.

12. Name and Telephone Number of Contact Person

For more information, call Michael Chihak at (618) 254-2260.

13. Requested Facility Information

The SIC code for our facility is 2911 (Petroleum Refining). We currently employ approximately 1,560 individuals.

Sincerely,

J. N. Brewster
Manager Environmental Conservation
Wood River Manufacturing Complex

bc: Head Office
S. C. Hendricksen
M. A. Dax

WRMC
E. G. Johnson
J. L. Newlin
W. L. Phelps
G. R. Peters
S. C. Franke
A. K. Peccola
M. A. Chihak
EC File No. 2056/Certified Letters Nos. 536, 537, 538

Shell Oil Company

P. O. Box 262
Wood River, IL 62095

January 17, 1991

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Illinois Emergency Services & Disaster Agency
110 East Adams Street
Springfield, IL 62706

Mr. Lanny Darr, Coordinator
Madison County Emergency Services and Disaster Agency
201 Hillsboro Street
Edwardsville, IL 62025

Mr. John Justice
Regional Manager, Division of Air Pollution Control
Illinois Environmental Protection Agency
2009 Mall Street
Collinsville, IL 62234

Gentlemen:

SUBJECT: EMERGENCY RELEASE NOTIFICATION - IESDA REPORT 903793

This letter is a follow-up to our telephone reports on a release of hydrogen sulfide from the Distilling flare at the Wood River Manufacturing Complex. The information required by 40 CFR 355.40 of the "Emergency Planning and Community Right to Know" Act is included.

1. Chemical Name or Substance Involved in the Release

   Process vent gases from Distilling. This stream is not stored. It is typically recovered for use as refinery fuel and as gasoline components. The hydrogen sulfide is removed and converted into sulfur.

2. CERCLA Extremely Hazardous Substances Released

   Hydrogen Sulfide (H2S)

3. Estimate of Quantity of CERCLA Extremely Hazardous Substance Released

   Approximately 1500 pounds of Hydrogen Sulfide were released.

4. Date and Time the Release

   The release began when the pilot went out on the Distilling flare at 9:10 p.m. on December 23, 1990.

5. Duration the Release

   The release continued for approximately 21.3 hours until the pilot could be relit at 6:30 p.m. on December 24, 1990.

6. Media into which the Release Occurred

   The release was to the atmosphere.

7. Notifications Made

   The Illinois EPA was notified at 11:32 p.m. on December 23, 1990 of the flare pilot outage. Due to odor potential, the Wood River police dispatcher was notified on December 24, 1990 at 5:14 p.m. Later, when additional flow and sample data made it apparent that there was a release of a reportable quantity, notifications were immediately made on December 24, 1990 to the Illinois ESDA at 9:55 p.m., the National Response Center at 9:45 p.m., the Madison County ESDA (Local Emergency Coordinator) at 9:50 p.m., and Illinois EPA at 10:30 p.m.

8. Probable Cause of the Release

   A line supplying fuel gas to the flare pilot burners was partially frozen, interrupting fuel gas flow to the flare. The pilot then went out. The vent gas compressor for this flare system was also down for maintenance, preventing the recovery of all the process vents routed to this flare system during the pilot outage.

9. Actions taken to Respond to and Contain the Release

   The flare system was inspected for operating problems. Steam tracing on the fuel gas lines at the flare and the associated steam traps were found to be in working order, as was the pilot ignitor system and the steam injection system.

   Methanol injection was begun on the line suppling fuel gas to the Distilling No. 1 area. This restored fuel gas pressure, but the flare pilots would not reignite. The pilots were relit after the burner lines were steamed out, the ignitor system transformer replaced, and the air pressure at the ignitor panel increased.

10. Measures to Prevent a Recurrence

The steam tracing on the DU-1 fuel gas line has been rechecked and is in good working condition. Methanol is available and guidelines have been issued to inject it into the DU-1 fuel gas line during cold weather in order to minimize the potential for freeze-ups.

11. Resultant Known or Exposure Health Risks and Community Impact

The release was evaluated using Shell's proprietary air dispersion model (ADHAP). A description of this air dispersion model has previously been sent to the Illinois EPA on April 15, 1988. The calculations indicated that peak exposure levels within the plant were less than one two-hundreth of recognized safe levels for worker exposure. The model indicated maximum levels in the community that would not have been expected to cause any health problems or cause a noticeable odor (We received no complaints).

12. Name and Telephone Number of Contact Person

For more information, call Michael Chihak at (618) 255-2260.

13. Requested Facility Information

The SIC code for our facility is 2911 (Petroleum Refining). We currently employ approximately 1560 individuals.

Sincerely,

J. N. Brewster

Joe Brewster, Manager
Environmental Conservation

MAC/tb

bc: Head Office
S. C. Hendricksen
M. A. Roth

WRMC
E. G. Johnson
J. L. Newlin
W. L. Phelps
G. R. Peters
S. C. Franke
T. J. Rizzo
M. A. Chihak
EC File 2056/Certified Letter Nos. 765, 766, 767

Shell Oil Company

P. O. Box 262
Wood River, IL 62095

January 17, 1991

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Illinois Emergency Services & Disaster Agency
110 East Adams Street
Springfield, IL 62706

Mr. Lanny Darr, Coordinator
Madison County Emergency Services and Disaster Agency
201 Hillsboro Street
Edwardsville, IL 62025

Mr. John Justice
Regional Manager, Division of Air Pollution Control
Illinois Environmental Protection Agency
2009 Mall Street
Collinsville, IL 62234

Gentlemen:

SUBJECT: EMERGENCY RELEASE NOTIFICATION - IESDA REPORT 903787

This letter is a follow-up to our telephone reports on a release of hydrogen sulfide from the Hydrodesulfurizer Unit No. 2 (HDU-2) at the Wood River Manufacturing Complex. The information required by 40 CFR 355.40 of the "Emergency Planning and Community Right to Know" Act is included.

1. Chemical Name or Substance Involved in the Release

   Stripper vent gas containing light hydrocarbons and a small amount of hydrogen and hydrogen sulfide. This stream is not stored, but is further processed into refinery fuel gas and gasoline. The hydrogen sulfide is removed during treatment and converted in sulfur.

2. CERCLA Extremely Hazardous Substances Released

   Hydrogen Sulfide (H2S)

3. Estimate of Quantity of CERCLA Extremely Hazardous Substance Released

   Approximately 200 pounds of Hydrogen Sulfide were released.

4. Date and Time of the Release

   The pressure relief valve on the HDU-2 accumulator vessel opened, releasing stripper vent gases to the atmosphere on December 22, 1990 at 6:15 a.m.

5. Duration of the Release

   The release continued for approximately 3.5 minutes until the pressure in the column decreased to where the relief valve reseated at 6:19 a.m. on December 22, 1990.

6. Media into which the Release Occurred

   The release was to the atmosphere.

7. Notifications Made

   When flow and sample data made it apparent that there was a release of a reportable quantity, notifications were immediately made on December 22, 1990 to the National Response Center at 9:12 a.m., the Madison County ESDA (Local Emergency Coordinator) at 9:19 a.m., the Illinois ESDA at 9:21 a.m., and Illinois EPA via fax at 9:40 a.m.

8. Probable Cause of the Release

   The release resulted from freeze-up problems on a low point return line from the accumulator to the stripper column and a freeze-up causing the accumulator pressure transmitter to give inaccurate readouts.

9. Actions taken to Respond to and Contain the Release

   The accumulator pressure was lowered by depressuring to the flare system. The relief valve then reseated, ending the release.

10. Measures Taken to Prevent a Recurrence

    Cold weather protection (tracing and insulation) was checked on the accumulator vessel lines and the pressure transmitter.

11. Resultant Known or Anticipated Exposure Health Risks and Community Impact

    The release was evaluated using Shell's proprietary air dispersion model (ADHAP). A description of this air dispersion model has previously been sent to the Illinois EPA on April 15, 1988. The model indicated that maximum levels in the community would not have been expected to cause any health problems, though there might be a noticeable odor (We received no complaints) for some distance into the community.

12. Name and Telephone Number of Contact Person

For more information, call Michael Chihak at (618) 255-2260.

Sincerely,

J. N. Brewster

Joe Brewster, Manager
Environmental Conservation

MAC/tb

bc: Head Office
S. C. Hendricksen
M. A. Roth

WRMC
E. G. Johnson
J. L. Newlin
W. L. Phelps
G. R. Peters
S. C. Franke
J. C. Welsh
M. A. Chihak
EC File 2056/Certified Letter No. 765, 766, 767

[illegible] 18, 1991 [illegible] [illegible]

From: WR34JCW --VM34 Date and time [illegible]
To: WR34MAC --VM34

*** Reply to note of 01/16/91 10:03
FROM: J.C. WELSH
MANAGER AROMATICS EAST
Subject: Draft Release Follow-up Report
Mike.

It's a day late; but the report is acceptable as is. I'm not sure what your comment about a unit shutdown meant, but what can be said is that the freeze-ups most likely occurred due to the fact that the unit shutdown due to a recycle compressor trio (ie an unscheduled emergency shutdown due equipment malfunctions; specifically the CR-3 recycle comoressor and /or instrumentation and the resulting HDU-2 recycle compressor trip).

If Joe didn't negoiate a "malfunction/breakdown" clause in our permits we're sunk. Let me know if you need any more from me.

cc: WR34JNB2--VM34 J. N. BREWSTER

...JOHN C. WELSH
...FUELS - WRMC
...SSN 236-2804
...PROFS NAME JCW6

E N D O F N O T E

HDU-2 VENT GAS STRIPPER COLUMN PRV R-1517?

	MW	WT%		MOL%
H2	2	1.87	0.935	24.90
N2	28	0.16	0.005714	0.15
H2S	34	5.36	0.157647	4.20
C1	16	8.01	0.500625	13.33
C2	30	35.00	1.166667	31.07
C3	44	28.60	0.65	17.31
IC4	58	7.63	0.131552	3.50
NC4	58	7.32	0.126207	3.36
IC5	72	2.67	0.037083	0.99
NC5	72	2.22	0.030833	0.82
NC6	86	1.17	0.013605	0.36
		100.01	3.754933	100

From: WR34JCW --VM34 Date and time 01/15/91 09:25:18
To: WR34MAC --VM34 M. A. CHIHAK

FROM: J.C. WELSH
MANAGER AROMATICS EAST
Subject: Incident Reports
...JOHN C. WELSH
...FUELS - WRMC
...SSN 236-2804
...PROFS NAME JCW6
*** Forwarding note from WR34JCW --VM34 12/24/90 10:51 ***
To: WR34GRP --VM34 G. R. PETERS

FROM: J.C. WELSH
MANAGER AROMATICS EAST
Subject: Incident Reports
Gene,
We believe that the PRV release on the HDU-2 accumulator was the result of freeze-up problems on a low point return line from the accumulator to the stripper column and a freeze-up to the accumulator pressure transmitter. Accumulator pressure was lowered by depressuring to the flare and the PRV reseated after an estimated 3 1/2 minutes.
The stripper accumulator vessel has a high concentration of H2S and for this reason is a CERCLA recordable release and a Class II+ incident.
Please contact me or Jerry Painter if you have any questions.
...JOHN C. WELSH
...FUELS - WRMC
...SSN 236-2804
...PROFS NAME JCW6
*** Forwarding note from WR34JNS --VM34 12/22/90 12:38 ***
To: WR34JNB2--VM34 J. N. BREWSTER WR34JDR3--VM34 J. D. RAY
WR34JJL --VM34 J. J. LA TEMPT WR34PMB --VM34 P. M. BROWN

FROM: J.N. Strohbeck
Environmental Supervisor
SUBJECT: Incident Reports

Following find three incident reports for Fuels\Aromatics. One of which is a CERCLA reportable incident.

SHELL WOOD RIVER MANUFACTURING COMPLEX
FIRST REPORT OF ENVIRONMENTAL INCIDENT
CERCLA REPORTABLE

DATE/TIME OF REPORT: December 22, 1990 REPORTER: J.N. Strohbeck
AREA: Fuels/HDU-2 @ Arom East FIELD INFORMATION: P. Brown

INCIDENT: ATMOSPHERIC PRV (#15177) RELEASED ON V-2407, Stripper Vent Gas Column for 3.5 minutes.

RESPONSE ACTIONS TAKEN/PLANNED: Lowered the column pressure, PRV reseated.

APPARENT SOURCE OF PROBLEM: Vent Gas Compressor Problems due to cold temperatures.

DATE/TIME INCIDENT OCCURRED:09/22/90 DISCOVERED: 6:15am STOPPED: 8:15am

5am - WIND FROM: NW AT: 18-23mph TEMP: 13 DEG F RH: 84 % SKY: Snowing

INCIDENT CLASS: II+ INCIDENT REPORTED BY OPERATING DEPARTMENT? (Y/N): YES

RELEASE INFORMATION:
Substance(s) released: HYDROGEN SULFIDE
Amount(s) released: 199.5 LBS.
CERCLA Reportable Quantity?: YES RQs released: YES
Extremely Hazardous Substance(s)?: YES
Off Shell Property? (Include all releases to air): YES

(If an RQ of an EHS is released off-property, state so in notifications. Also report known or anticipated health risks, advice regarding medical attention, and precautions to take as a result of the release.)

AGENCIES NOTIFIED:	Y/N	DATE	TIME	CONTACT	REPORT NO.
National Response Center 800/424-8802	Y	122290	9:12AM	J. BOWMAR	52150
Madison County ESDA 618/692-0537	Y	122290	9:19AM	M.C. POLICE DISPATCHER (MARY)	NONE
Illinois ESDA 800/782-7860	Y	122290	9:21AM	JACKIE (DISPATCHER)	903787
Illinois EPA					
Office 618/346-5120					
Benbenek 618/656-7616					
FAX 618/346-5155	Y	122290	SENT BY FAX @ 9:40AM		
Justice 618/344-0145					
Local USCG 314/425-5823	N				
Police					
Roxana 254-1945	N				
S. Roxana 254-7469					
Hartford 254-4391					
Wood River 254-4303					

SHELL WOOD RIVER MANUFACTURING COMPLEX
FIRST REPORT OF ENVIRONMENTAL INCIDENT

DATE/TIME OF REPORT: 122290 11:50AM REPORTER: J.N. STROHBECK
AREA: FUELS\AROMATICS EAST FIELD INFORMATION: J. LaTEMPT

INCIDENT: SMOKING OF AROMATICS EAST SOUTH FLARE.

Shell Oil Company

P. O. Box 262
Wood River, IL 62095

January 15, 1991

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Illinois Emergency Services & Disaster Agency
110 East Adams Street
Springfield, IL 62706

Mr. Larry Starr, Coordinator
Madison County Emergency Services and Disaster Agency
300 Hillsboro Street
Edwardsville, IL 62025

Mr. John Justice, Division of Air Pollution Control
Regional Manager,
Illinois Environmental Protection Agency
2009 Mall Street
Collinsville, IL 62234

Dear Sirs:

Subject: EMERGENCY RELEASE NOTIFICATION - IESDA REPORT 910001

This is a follow-up to our telephone reports on a release of hydrocarbons from the Gas Plant RAU Debutanizer Column at the Wood River Refining Complex. The information required by 40 CFR 355.40 "Emergency Planning and Community Right to Know" Act is included.

1. Chemical or Substance Involved in the Release

Hydrocarbons, primarily propane, propylene, butane, butylene, and a small amount of hydrogen sulfide. This process stream is not normally further processed into gasoline, propane, and sulfur.

2. Chemical Name of Substances Released

Hydrogen Sulfide (H2S)

3. Estimated Quantity of CERCLA Extremely Hazardous Substance Released

Approximately 140 pounds of Hydrogen Sulfide were released.

4. Date and Time of the Release

The pressure relief valve on the RAU Debutanizer Column opened below its setpoint, releasing gases to the atmosphere on January 1, 1991 at 5:30 a.m.

5. Duration of the Release

The release continued for approximately 36 minutes until the pressure relief valve was blocked at 6:06 a.m. on January 1, 1991.

6. Media into which the Release Occurred

The release was to the atmosphere.

7. Notifications Made

When flow and sample data made it apparent that there was a release of a reportable quantity, notifications were immediately made on January 1, 1991 to the National Response Center at 9:00 a.m., the Illinois ESDA at 9:07 a.m., the Madison County ESDA (Local Emergency Coordinator) at 9:15 a.m., and Illinois EPA via fax at 9:58 a.m.

8. Probable Cause of the Release

The release was due to the pressure relief valve opening well below its setpoint. The reason for this mechanical failure is not yet determined.

9. Actions taken to Respond to and Contain the Release

The operators determined which column was relieving and climbed the column and manually blocked the flow to the pressure relief valve, ending the release. The column continued in operation, with alternative pressure relief capability provided as per Complex procedures. The column was shutdown on January 15, 1991 to allow the failed relief valve to be removed for inspection and repair.

10. Measures Taken to Prevent a Recurrence

The pressure relief valve has been removed and will be inspected and repaired as necessary before being reinstalled.

11. Resultant Known or Anticipated Exposure Health Risks and Community Impact

The release was evaluated using Shell's proprietary air dispersion model (ADHAP). A description of this air dispersion model has previously been sent to the Illinois EPA on April 15, 1988. The calculations indicated that peak exposure levels would occur within the facility and would only be one twenty-fifth of recognized safe levels for worker exposure. The model indicated that maximum levels in the community would not have been expected to cause any health problems, though there might be a noticeable odor (We received no complaints) for some distance into the community.

12. Name and Telephone Number of Contact Person

For more information, call Michael Chihak at (618) 255-2260.

13. Requested Facility Information

The SIC code for our facility is 2911 (Petroleum Refining). We currently employ approximately 1560 individuals.

Sincerely,

J. N. Brewster

Joe Brewster, Manager
Environmental Conservation

JNB/tb

bc: Head Office
S. C. Hendricksen
M. A. Roth

WRMC
E. G. Johnson
J. L. Newlin
W. L. Phelps
G. R. Peters
S. C. Franke
A. K. Peccola
M. A. Chihak
EC File 2056/Certified Letter No. 765, 766, 767

Shell Oil Company

P. O. Box 262
Wood River, IL 62095

February 8, 1991

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Dean Schlee
Illinois Emergency Services & Disaster Agency
110 East Adams Street
Springfield, IL 62706

Mr. Lanny Darr, Coordinator
Madison County Emergency Services and Disaster Agency
201 Hillsboro Street
Edwardsville, IL 62025

Mr. Mark Johnson
Illinois Environmental Protection Agency
2009 Mall Street
Collinsville, IL 62234

Gentlemen:

SUBJECT: ON-SITE CERCLA REPORTABLE QUANTITY RELEASE NOTIFICATION
IESDA INCIDENT - 910193

This letter is a follow-up to our telephone reports on a spill of sodium hydroxide to the ground at the Wood River Manufacturing Complex. The information normally requested by IESDA is included.

1. Chemical Name or Substance Involved in the Release

   Sodium Hydroxide

2. CERCLA Extremely Hazardous Substances Released

   None

3. Estimate of Quantity of CERCLA Hazardous Substance Released

   Approximately 9,300 pounds of sodium hydroxide were spilled.

4. Date and Time of the Release

   Evidence of a release of caustic was discovered at 3:45 p.m., on January 20, 1991.

5. Duration of the Release

   The release was stopped at 7:00 p.m., on January 20, 1991, by rerouting spent caustic streams and blocking the inlet to Tank S-10 to prevent backflow.

6. Media into which the Release Occurred

   The release was confined to the ground inside the tank yard containing Tank S-10 and four other inactive tanks. No material leaked off Shell property.

7. Notifications Made

   Immediate steps were initiated to determine the volume of material in the tank yard, and samples were collected and analyzed to determine the composition of the material. Immediately upon a determination that there was an exceedance of the reportable quantity for sodium hydroxide, action was taken to notify the proper Agencies. We notified the National Response Center at 9:25 p.m., the Illinois ESDA at 9:32 p.m., and made a courtesy call to the Madison County ESDA (LERC) at 9:30 p.m. The Collinsville office of the Illinois EPA was notified via fax at 10:45 p.m.

8. Probable Cause of the Release

   A leak developed in the spent caustic line to Tank S-10. The leak occurred inside a covered valve box. The spent caustic then leaked into the tank yard through a hole in the valve box mortar. The cause of the leak is still being investigated by the inspection department.

9. Actions taken to Respond to and Contain the Release

   When sample results on the water in the tank yard indicated a caustic leak, the location of the leak was discovered and steps were taken to isolate the line. Valves were closed in the pipe rack and at Tank S-10 to isolate the leaking section of line. The weak caustic (approximately 680 barrels of 3.8% NaOH) in the tank yard was pumped to the process sewer system upstream of the neutralization facilities.

10. Measures Taken to Prevent a Recurrence

    The use of this part of the spent caustic handling system has been discontinued. New spent caustic handling facilities will soon be put into service as part of our revised wastewater treatment facilities.

11. Resultant Known or Anticipated Exposure Health Risks and Community Impact

There are no known or anticipated exposure health risks associated with this release. There was no public exposure from this on-property release. Sodium hydroxide has a negligible vapor pressure.

12. Name and Telephone Number of Contact Person

For more information, call Michael Chihak at (618) 254-2260.

13. Requested Facility Information

The SIC code for our facility is 2911 (Petroleum Refining). We currently employ approximately 1,560 individuals.

Sincerely,

J. N. Brewster

J. N. Brewster, Manager
Environmental Conservation
Wood River Manufacturing Complex

bc: Head Office
S. C. Hendricksen
M. A. Roth

WRMC
E. G. Johnson/W. L. Phelps/R. D. Gillette/M. A. Chihak
J. L. Newlin/H. C. Olsen/T. J. Roff
EC File 2056/Certified Letter Nos. 820, 821, 822

Shell Oil Company

P. O. Box 262
Wood River, IL 62095

June 4, 1991

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Illinois Emergency Services & Disaster Agency
110 East Adams Street
Springfield, IL 62706

Mr. Lanny Darr, Coordinator
Madison County Emergency Services and Disaster Agency
201 Hillsboro Street
Edwardsville, IL 62025

Mr. Tom Powell
Illinois Environmental Protection Agency
2009 Mall Street
Collinsville, IL 62234

Gentlemen:

SUBJECT: ON-SITE CERCLA REPORTABLE QUANTITY RELEASE NOTIFICATION
IESDA INCIDENT - 911343

This letter is a follow-up to our telephone reports on a spill of benzene to the ground at the Wood River Manufacturing Complex. The information requested by IESDA is included.

1. Chemical Name or Substance Involved in the Release

Benzene

2. CERCLA Extremely Hazardous Substances Released

None.

3. Estimate of Quantity of CERCLA Hazardous Substance Released

Approximately 26 pounds of benzene were spilled.

4. Date and Time of the Release

Benzene was discovered to be dripping from a hose at 6:50 a.m. on May 20, 1991.

5. Duration of the Release

The release was immediately stopped at 6:50 a.m. on May 20, 1991 by blocking a valve to the dripping open-ended hose.

6. Media into which the Release Occurred

The release was confined to several small water puddles on the ground.

7. Notifications Made

Immediate steps were initiated to determine the volume of material released. The spilled material was sampled and analyzed to determine its composition. Immediately upon a determination that there was an exceedance of the reportable quantity for benzene, action was taken to notify the proper Agencies. We notified the National Response Center at 12:45 p.m., the Illinois ESDA at 12:53 p.m., and made a courtesy call to the Madison County ESDA (LERC) at 1:00 p.m. The Collinsville office of the Illinois EPA was notified via fax at 1:13 p.m.

8. Probable Cause of the Release

Benzene product backed through a check valve, into the temporarily installed hose and onto the ground.

9. Actions taken to Respond to and Contain the Release

The release of benzene was immediately stopped by blocking a valve to the dripping, open-ended hose. The material was picked up using a vacuum truck by 8:00 a.m. The hose was disconnected and a block valve and plug were installed. A temporary benzene regulated area was established until air monitoring no longer showed the need. Possibly contaminated soil has been removed and properly disposed.

10. Measures Taken to Prevent a Recurrence

We have reviewed the use of and reemphasized our procedures regarding the removal of temporary hoses.

11. Resultant Known or Anticipated Exposure Health Risks and Community Impact

There are no known or anticipated exposure health risks associated with this release. There was no public exposure from this on-property release. Benzene was non-detectable (less than 1 ppm) by detector tube at the North Property bridge that was directly downwind of the release toward the closest fence line.

12. Name and Telephone Number of Contact Person

For more information, call Michael Chihak at (618) 255-2260.

13. Requested Facility Information

The SIC code for our facility is 2911 (Petroleum Refining). We currently employ approximately 1600 individuals.

Sincerely,

M. A Chihak Jr

Joe Brewster, Manager
Environmental Conservation
Wood River Manufacturing Complex

Shell Oil Company

P. O. Box 262
Wood River, IL 62095

May 21, 1991

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Ron Stephens, Director
Illinois Emergency Services & Disaster Agency
110 East Adams Street
Springfield, IL 62706

Mr. Lanny Darr, Coordinator
Madison County Emergency Services and Disaster Agency
201 Hillsboro Street
Edwardsville, IL 62025

Mr. Tom Powell
Illinois Environmental Protection Agency
2009 Mall Street
Collinsville, IL 62234

Gentlemen:

SUBJECT: ON-SITE CERCLA REPORTABLE QUANTITY RELEASE NOTIFICATION
IESDA INCIDENT - 911962

This letter is a follow-up to our telephone reports on a spill of sulfuric acid to the ground at the Wood River Manufacturing Complex. The information normally requested by IESDA is included.

1. Chemical Name or Substance Involved in the Release

   Sulfuric Acid

2. CERCLA Extremely Hazardous Substance Released

   Sulfuric Acid

3. Estimate of Quantity of CERCLA Hazardous Substance Released

   Approximately 200,000 pounds of sulfuric acid were spilled.

4. Date and Time of the Release

   The leak was discovered at 5:20 p.m. on May 10, 1991.

5. Duration of the Release

   The release was stopped at 11:00 a.m. on May 11, 1991 by transferring the remaining acid from the leaking tank into other tanks and to the Alkylation Unit.

6. Media into which the Release Occurred

   The release was to the ground. No material was released off Shell property.

7. Notifications Made

   On May 10, we notified the National Response Center at 6:43 p.m., the Illinois ESDA at 6:55 p.m., and made a courtesy call to the Madison County ESDA (LERC) at 7:08 p.m. The Collinsville office of the Illinois EPA was notified via fax at 12:08 a.m. on May 11. Updated information was provided on May 11 to Illinois ESDA and to Tom Powell of the Illinois EPA and on May 13 to Madison County ESDA (LERC).

8. Probable Cause of the Release

   Tank CH-262 is designed with a bayonet heater to use steam to keep the acid from freezing during cold weather storage. This bayonet heater developed an internal leak. A leak then developed in the external piping associated with this bayonet heater due to the corrosive nature of the acid.

9. Actions taken to Respond to and Contain the Release

   A dike was constructed of soda ash to contain and start neutralizing the spilled acid. The acid remaining in the leaking tank was transferred to other acid storage tanks and to the Alkylation Unit. About 75 percent of the spilled acid was recovered. The contaminated soil will be neutralized and then disposed of in an offsite landfill. The excavated area will then be backfilled with lime and limestone.

10. Measures Taken to Prevent a Recurrence

    The bayonet heater will be pulled and a blind flange installed in its place. The tank will be externally inspected prior to being returned to service. The bayonet heaters on other tanks in the same service will also be inspected. A team will review this incident to determine the root cause and to recommend measures to consider for preventing a recurrence.

11. Resultant Known or Anticipated Exposure Health Risks and Community Impact

There are no known or anticipated exposure health risks associated with this release. There was no public exposure from this on-property release. Sulfuric acid has a negligible vapor pressure.

12. Name and Telephone Number of Contact Person

For more information, call Michael Chihak at (618) 254-2260.

13. Requested Facility Information

The SIC code for our facility is 2911 (Petroleum Refining). We currently employ approximately 1560 individuals.

Sincerely,

J. N. Brewster

J. N. Brewster
Manager Environmental Conservation
Wood River Manufacturing Complex

bc: Head Office
S. C. Hendricksen
M. A. Roth

WRMC
E. G. Johnson/W. L. Phelps/R. D. Gillette/M. A. Chihak
J. L. Newlin/S. C. Franke/D. A. Jacober
EC File 2056/Certified Letter Nos. 33, 34, 35

Shell Oil Company

P. O. Box 262
Wood River, IL 62095

September 18, 1991

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Oran Robinson
Illinois Emergency Services & Disaster Agency
110 East Adams Street
Springfield, IL 62706

Mr. Lanny Darr, Coordinator
Madison County Emergency Services and Disaster Agency
201 Hillsboro Street
Edwardsville, IL 62025

Mr. Mark Johnson
Illinois Environmental Protection Agency
2009 Mall Street
Collinsville, IL 62234

Gentlemen:

SUBJECT: ON-SITE CERCLA REPORTABLE QUANTITY RELEASE NOTIFICATION
IESDA INCIDENT - 912533

This letter is a follow-up to our telephone reports on a spill of sodium hydroxide to the ground at the Wood River Manufacturing Complex. The information normally requested by IESDA is included.

1. Chemical Name or Substance Involved in the Release

Sodium Hydroxide.

2. CERCLA Extremely Hazardous Substances Released

None.

3. Estimate of Quantity of CERCLA Hazardous Substance Released

Approximately 1,800 pounds of sodium hydroxide were spilled.

4. Date and Time of the Release

Evidence of a release of caustic was discovered at 3:30 a.m. on September 8, 1991.